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THE PSYCHOLOGICAL BULLETIN

1. GENERAL

317. SCHJELDERUP, H. K., The Theory of Relativity and its Bearing upon Epistemology. *Scand. Sci. Rev.*, 1922, 1, 14-65.

The author attempts to show the bearing of the concepts of the new physics on epistemology. He first shows "that Einstein's theory in reality only means a consistent carrying through in physics of two well known epistemological principles, namely, the principle of observability and the principle of continuity." The author then tries to show the importance of the new physics for the conception of reality on the background of the natural sciences. S. W. FERNBERGER (Pennsylvania).

318. SPEARMAN, C., and FLÜGEL, J., The Present Status of Psychological Science in Different Countries. I. Great Britain and Ireland. *Scand. Sci. Rev.*, 1922, 1, 112-115.

Statement of the individuals doing psychological work in England with a very brief account of the general interests of the group. S. W. FERNBERGER (Pennsylvania).

319. REYMERT, M. L., A New Elbow Ergograph. *Scand. Sci. Rev.*, 1922, 1, 103-111.

Description illustrated with photographs of a new form of ergograph which may be used for recording movements of the biceps muscles, muscles of the back or of the legs, or for the finger muscles. S. W. FERNBERGER (Pennsylvania).

320. AALL, A., Alfred Lehmann. In Memoriam. *Scand. Sci. Rev.*, 1922, 1, 7-13.

Appreciation of the life and work of the late Alfred Lehmann. S. W. FERNBERGER (Pennsylvania).

321. SHEARD, C., William Molyneux and his *Dioptrica nova*. *Amer. J. of Physiol. Optics*, 1922, 3, 7-24.

Short personal and appreciation of Molyneux's book on dioptrics published in 1692. Chapter 3, entitled Of Glasses for defective Eyes, is reproduced in facsimile. S. W. FERNBERGER (Pennsylvania).

322. SWEETING, R. E., Life and Optical Researches of Sir Isaac Newton. *Amer. J. of Physiol. Optics*, 1922, 3, 219-237.

Brief description of Newton's life and of some of his more famous experiments. S. W. FERNBERGER (Pennsylvania).

323. ATKINSON, T. G., Einstein and Optics. *Amer. J. of Physiol. Optics.*, 1923, 4, 45-48.

The author points out the importance of the concepts of the theory of relativity in the study of optics. S. W. FERNBERGER (Pennsylvania).

324. DALLENBACH, K. M., Some New Apparatus. *Amer. J. of Psychol.*, 1923, 34, 90-95.

Three pieces of apparatus are described and illustrated by drawings. The first is a modification of Benussi's Kinohapt which provides for adjustment in three dimensions and for magnetic application of the stimulus upon the completion of an electric circuit, with a spring release. The apparatus is adapted for subcutaneous as well as for cutaneous work since the stimulus point is detachable. The second piece is a thermal stimulator, built upon the principle of the hollow cone. The pressure of the stimulus-point upon the skin is controlled and the cone proper is kept at a distance from the skin so as to minimize stimulation by radiation and permit more accurate localization. An apparatus for the study of the conditions and clearness is also described which is used in the tachistoscopic presentation of two areas of light whose shape, size, quality and intensity may be varied concomitantly or independently. G. J. RICH (Pittsburgh).

325. MOTT, F., Body and Mind: The origin of dualism. *Ment. Hyg.*, 1922, 6, 673-687.

This is an interesting and stimulating article, written by a physician and reprinted through the courtesy of *The Lancet*. It deals historically with the growth of psychology as a biological science,

pointing out how evidence from a study of evolution, the instincts and emotions, the functioning of the ductless glands, and the neurological theories advanced by Hughlings Jackson and Bolton, the physiologist, all point to the inseparability of body and mind, and to the importance of a study of biology and bio-chemistry in dealing with problems of the mind in health and disease. R. H. WHEELER (Oregon).

326. WELLS, F. L., Psychology in medicine. *Ment. Hyg.*, 1922, 6, 700-707.

We are at a rather critical state in the development of medico-psychological relationships. For the sake of the good to humanity both medicine and psychology must pool their information to the end that we may be equipped to handle problems of human adjustment. The support of psychology belongs to any group of sciences as long as it is able to carry scientific discipline into the affairs of men. There are important medical problems which have been solved by psychologists and there are psychological problems that have been solved by physicians. Neither group of men should attempt to divide the field. Mental defect, for example, is a medical as well as a psychological problem. There is a setting of responsibility provided for by medicine that psychology does not furnish. The regulation of consulting psychologists by the A. P. A. and the Psychological Corporation are moves in the right direction; but the ultimate responsibility for public protection rests with the public. The public should be educated to understand the legitimate services of both sciences. It will be the best for both sciences when each learns with the most freedom from the other and adopts the truism: it is not only how much you know, but what you know and how you use it. R. H. WHEELER (Oregon).

2. NERVOUS SYSTEM

327. BAZETT, H. C., and PENFIELD, W. G., A Study of the Sherrington Decerebrate Animal in the Chronic as well as the Acute Condition. *Brain*, 1922, 45, 185-265.

The authors have developed a technique by means of which they were able to keep decerebrate animals alive for many days and so were able to study the reactions over a long period of time. The authors found that animals in this condition maintain throughout the general characteristics described by Sherrington. The extensor

rigidity is maintained with brief intermissions. Certain differences between the acute and chronic states were noticed as, for example, in the later stages there was a much greater tendency for flexed positions to be assumed. Changes in a number of the reflexes are noted while certain of the reflexes remained relatively unchanged. In certain animals decerebration was performed on one side only. In such cases forced movements were always directed away from the side of removal. S. W. FERNBERGER (Pennsylvania).

328. RHEIN, J. H. W., An Anatomic Study of the Faisceau de Türrck in Relation to the Temporal Lobe. *Archiv. of Neurol. and Psychiat.*, 1922, 8, 608-613.

The literature reveals many opposing notions of the origin of Türrck's bundle. The writer describes a tumor which destroyed the cortex and white matter of the superior and middle temporal gyri, and the implication by cellular infiltration of brain tissue anterior and posterior to these regions and to the extent of about 2.5 cm. The fasciculus of Türrck, at and below the point where it appears in the retrolenticular region, was intact. If the fasciculus of Türrck has its origin in the temporal lobe at all, the writer concludes, it may come from the posterior third of the third temporal convolution. D. A. MACFARLANE (Boston Psychopathic Hospital).

329. FISHER, R. A., The systematic location of genes by means of crossover observations. *Amer. Nat.*, 1922, 56, 406-411.
R. H. WHEELER (Oregon).

330. DUNN, E. R., The sound-transmitting apparatus of salamanders and the phylogeny of the caudata. *Amer. Nat.*, 1922, 56, 418-427.

A morphological study and comparison of the sound transmitting apparatus of various salamanders. The author's purpose has been to add to Kingsbury and Reed (1920), to suggest a somewhat different interpretation of the facts observed by them, and to propose a somewhat different phylogeny. The problem of classification of these animals is a difficult one owing to the fact that from an original stock there have evolved forms tending toward aquatic life and forms tending toward terrestrial life. In the present instance the problem deals with stock neither absolutely one or the other. Since the sound-transmitting apparatus is admittedly correlated with mode of life rather than with family or genus, as a character in determin-

ing relationships it must be used with extreme caution. Caudata have an extreme antiquity, a certain river-adapted form having lived in Oligocene times. Thus the origin of the main stocks must have been as early as the Mesozoic. A careful examination of skull characters of living and fossil varieties will help establish such affinities between different groups as are now probably misinterpreted because of misleading criteria. R. H. WHEELER (Oregon).

331. PRZIBRAM, H., Autophoric transplantation, its theory and practice. *Amer. Nat.*, 1922, 56, 548-559.

This paper, by a famous Viennese authority, shows that well-defined parts of the animal body may be easily detached and at the same connecting points similar new organs can be replaced, if the following conditions exist: (1) that the old and new organs be of equal size and orientation; (2) that there be a simple exchange, without exertion of pressure or additional injury to nerves beyond a clean cut; (3) that loss of the organ by activities of the animal itself be prevented (friction, clasp, blood clot, etc.) The following evidence is at hand: (1) replantation, with restoration of function in the visceral sac of *Antedon* (Przibram, 1901); (2) in the eyes of fish, amphibia and mammals (Koppanyi, 1921); (3) in the lens of the two former classes (Wiesner, 1921); (4) in the heads of insects, walking sticks, water bugs, water beetles (Finkler, 1921). Remarkable success has been achieved in transplanting eyes in rats, and heads in insects. These experiments indicate that our notion of regenerative processes must be modified. The process of regeneration is evidently the acceleration of physiological processes going on all the time in the body of organisms. Reattachment of nerve proceeds in the same way as original growth of the nerve. It is not true that maintenance and functional regeneration of organs depend on their uninterrupted connection with their special nervous centers. R. H. WHEELER (Oregon).

332. SWINGLE, W. W., Spontaneous metamorphosis of the American Axolotl. *Amer. Nat.*, 1922, 56, 560-567. R. H. WHEELER (Oregon).

333. HOLMGREN, N., Points of view concerning forebrain morphology in lower vertebrates. *J. of Comp. Neurol.*, 1922, 34, 391-460.

This paper attempts to show that the pallium of practically all vertebrates is divided into three parts, known from reptiles and

mammals as hippocampal, general pallial, and pyriform cortex. This opinion is founded especially on the conditions in embryonic shark brains. This same subdivision is also demonstrated in ganoids and bony fishes, where the so-called striatum is shown to contain these same parts. The everted forebrain of bony fishes is explained as resulting from a preceding phylogenetic inverted and evaginated stage. Also to the subpallial parts the author has paid attention, and attempted to establish the homologies through the series of lower vertebrates. The paper ends with a part treating with the forebrain phylogeny in the light of paleontology. (Taken from the author's own summary.) According to the author, the best morphological separations between pallial and subpallial structures are the zonae limitantes. All parts dorsal to the zonae limitantes belong to the pallium, the parts ventral thereto are subpallial. This description agrees roughly with Herrick's but is more concise; but differs from Edinger and others who base the distinction between pallial and subpallial structures upon the view that a true pallium does not receive olfactory fibers of lower order than the third. The subdivision of the pallium has taken place in a very remote period, probably already in the Silurian. In this period, also, the subpallial nuclei seem to have been differentiated and the frontal evagination had taken place. The inversion of the forebrain is a primitive phenomenon. Silurian fishes probably had an inverted and also evaginated forebrain. The eversion, characteristic of Polypterus, ganoids, and teleosts, probably took place in the early Devonian period. R. H. WHEELER (Oregon).

334. KINGSBURY, B. F., The fundamental plan of the vertebrate brain. *J. of Comp. Neurol.*, 1922, 34, 461-492.

In the author's belief the primary morphological plan of the brain as presented by His needs revision. Chick and shark embryos were the forms chosen for examination. The present paper is a continuation of work published in this journal in 1920 and aims to examine the fundamental plan of the brain and brain-plate from the standpoint of the occurrence and significance of the three sutures postulated by His (*sutura dorsalis*, anterior and *neurochordalis*). Not only do his results bear out the author's former conclusion with respect to the brain-plate, but are in harmony with the interpretation of Johnson (this journal, 1909) that the brain-plate ends anteriorly with the terminal ridge, embodying a potential chiasmatic ridge, and that the two optic foveæ are connected across the median plane by a primitive optic furrow which is also the primitive infundibulum.

His made the floor plate and his sutura neurochordalis terminate at the primitive infundibular recess which latter marked the anterior medial limit of the brain-plate. Anterior to this the sutura terminalis closed the neural tube in front, meeting the sutura dorsalis or roof plate. The sulcus limitans between the primary motor zone and primary sensory zone terminated at the preoptic recess. The author finds, however, that the floor plate extends no farther forward than the fovea isthmi, whereas the medial cephalic limit of the brain-plate would include the optic chiasma. The chief advantages of this interpretation are (1) that it provides a primary continuity across the middle plane of nervous material of alar and basilar plates and furnishes a more adequate basis for the understanding of the morphology of the head as a whole. The author's recognition of a primary continuity of the nervous parietes in the brain, anterior to the notochordal axis, together with a more correct evaluation of the sutura neurochordalis of His are claimed to be not only more consistent with the mechanics of neural growth but a contribution on the ground that the developmental origin of the brain-plate and morphogenesis of the brain are unseparable from the question of morphogenesis of the head and of the body as a whole. R. H. WHEELER (Oregon).

335. Rossi, O., On the afferent paths of the sympathetic nervous system, with special reference to nerve cells of spinal ganglia sending their peripheral processes into the rami communicantes. *J. of Comp. Neurol.*, 1922, 34, 493-505.

In embryos of birds (sparrow) and mammals (pig) there is demonstrated for the first time, the author believes, the occurrence in the spinal ganglia of nerve cells, the peripheral processes of which pass into the rami communicantes. These are the cells of origin of Kolliker's fibers and are regarded as afferent visceral sensory neurons. Golgi's method was used. R. H. WHEELER (Oregon).

3. SENSATION AND PERCEPTION.

336. HAUPT, I. A., The Selectiveness of the Eye's Response to Wave-Length and its Change with Change of Intensity. *J. of Exper. Psychol.*, 1922, 5, 347-379.

The present study was undertaken in the attempt to deal quantitatively with the selectiveness of the eye's response. More particularly it sought to determine the chromatic RL at seven points on

the spectrum and the number of j. n. d. between the lower and upper chromatic thresholds of the four primary colors. The apparatus was designed to present to *O* two colored stimuli in a visual field subtending an angle of $1^{\circ} 55.8'$ with the surrounding field either dark or equated to the brightness of the stimuli. The variations in energy of physical light required for determinations of chromatic j. n. d. from zero to maximum were effected by means of neutral grey gelatine filters and sector disks devised especially for liminal work. The method of limits was the procedure employed for arriving at the j. n. d. The monochromatic lights used were bands from the following regions of the prismatic spectrum: *R*, 655 $\mu\mu$; *O*, 616 $\mu\mu$; *Y*, 580 $\mu\mu$; *YG*, 553 $\mu\mu$; *G*, 522 $\mu\mu$; *BG*, 488 $\mu\mu$; and *B*, 463 $\mu\mu$. With the dark surrounding field it was found that liminal chromatic sensitivity increased in the following order: *O*, *R*, *Y*, *BG*, *B*, *YG*, and *G*. With the light surrounding field the order was: *O*, *Y*, *R*, *YG*, *B*, *G*, and *BG*. At the upper threshold, with the dark field, decreasing sensitivity followed the order of *YG*, *G*, *O*, *B*, *BG*, *R*, and *Y*; with the light field, *YG*, *G*, *O*, *BG*, *B*, *R*, and *Y*. In the work on chromatic discrimination with the four primary colors it was found that with the dark field *Y*, *G*, *R*, and *B* reached their maximum points of saturation at the 20th, 32nd, 40th, and 55th j. n. d. respectively; with the light field *Y*, *G*, *B*, and *R* reached their maxima at the 46th, 70th, 72nd, and 81st j. n. d. C. C. PRATT (Harvard).

337. TRAVIS, L. E., Studies in Dissociation. 1. Changes in the Auditory Threshold induced by "Crystal Gazing." *J. of Exper. Psychol.*, 1922, 5, 338-346.

Is voluntary abstraction or dissociation at all related to actual operative dissociation? In order to throw some light on this question the intensive auditory RL for ten subjects was determined by means of the Iowa Pitch-Range Audiometer, after which the subjects were instructed to gaze into a crystal which gave the appearance of the heavens on a clear night, and to begin the abstraction by recalling some pleasant experience. Under these conditions the RL was again determined. The auditory thresholds of eight of the ten subjects changed during "crystal gazing"; for four *O*'s the limens were raised, and for the other four, lowered. It seemed likely that responses to subliminal intensities were due to neural set rather than to increased acuity of the receiving organ. C. C. PRATT (Harvard).

338. KURTZ, J. I., Malingering—Pretended Blindness. *Amer. J. of Physiol. Optics*, 1922, 3, 327-337.

Description of tests to be used to determine whether or not a person is malingering when they claim the following: (1) total blindness in one eye; (2) partial blindness in one eye; (3) total or partial blindness in both eyes. S. W. FERNBERGER (Pennsylvania).

339. MADDOX, E. E., Heterophoria. *Amer. J. of Physiol. Optics*, 1922, 3, 25-46.

The paper discusses the divisions, the tests for and the treatment of heterophoria. One distinction which has to be made is as to whether the divergence is due primarily to the muscles themselves or to the reflexes. By means of a new classification, the author analyzes the different kinds of differences in the movements of the two eyes. Certain operative and nonoperative corrective measures are suggested. S. W. FERNBERGER (Pennsylvania).

340. WISEMAN, E. G., Cerebral Malprojection of the Spatial Point Ocular Muscles in Ametropia. *Amer. J. of Physiol. Optics*, 1922, 3, 71-88.

The author attempts to give a neurological basis for the apparent displacement of a point in space which frequently occurs during the testing of the tonicity of the ocular muscles. S. W. FERNBERGER (Pennsylvania).

341. PRENTICE, C. F., The Lateral Adaptability of the Extrinsic Ocular Muscles in Ametropia. *Amer. J. of Physiol. Optics*, 1922, 3, 109-129.

Recommendations for corrective treatment so that images may be properly formed on the retina in spite of imbalance of the lateral external eye muscles. S. W. FERNBERGER (Pennsylvania).

342. SHEARD, C., The Comparative Value of Various Methods and Practices in Skiametry. *Amer. J. of Physiol. Optics*, 1922, 3, 177-208.

The author first discusses the factors affecting visual acuity tests and points out the inaccuracies of such tests as the Snellen types. Then static and dynamic skiametry methods are discussed and the author analyzes the factors operative in his own method. The

monocular and binocular amplitudes of accommodation are considered both theoretically and by means of illustrative cases. S. W. FERNBERGER (Pennsylvania).

343. SWINDLE, P. F., A Physiological Explanation of Certain Optical Illusions. *Amer. J. of Physiol. Optics*, 1922, 3, 238-255.

An attempt to explain several visual illusions (Müller-Lyer, Oppel, Poggendorff) in terms of induced visual effects on neighboring regions of the retina to those stimulated by the lines of the figures. In this way certain blurs are formed which are the basis of the illusionary effects. S. W. FERNBERGER (Pennsylvania).

344. ROBINSON, S. H., Oculo-Prism Treatment. *Amer. J. of Physiol. Optics*, 1922, 3, 158-176, 274-292, 366-390; 1923, 4, 77-102.

Practical hints on the giving of ocular muscle tests and on ocular muscle exercise written in a manual form and plentifully illustrated with diagrams. S. W. FERNBERGER (Pennsylvania).

345. SHEARD, C., Some Important Physical and Physiological Relationships between Radiant Energy and the Visual Apparatus and Processes. *Amer. J. of Physiol. Optics*, 1922, 3, 391-429.

The author after reviewing the experimental work on chromatic and spherical aberration and astigmatism passes to a discussion of color vision. In this latter connection the Young-Helmholtz, Hering and the Ladd-Franklin theories are discussed in the light of recent findings. A chemical *versus* mechanical and electrical theories of vision are considered and special attention is given to the electrical type of theory. The author believes that the electrical phenomena in connection with vision cannot be ignored. He believes that "experimental results point to the localization of two photo-electrical substances in the posterior half of the eyeball or that the retina is the seat of a double electrical movement which may consist of duplex changes in one substance or of two changes in two different components or substances." S. W. FERNBERGER (Pennsylvania).

346. AMES, A., JR., and PROCTOR, C. A., Aberrations of the Eye. *Amer. J. of Physiol. Optics*, 1923, 4, 3-37.

Report of long experimental series of measuring spherical aberration of the lens with a new apparatus and by a new method.

Detailed results and charts are included. Some introductory results of measurements of axial chromatic aberration—the focussing of rays of different wave length at different distances along the axis are also given. S. W. FERNBERGER (Pennsylvania).

347. JOLY, J., A Quantum Theory of Vision. *Amer. J. of Physiol. Optics.*, 1922, 3, 130–149.

The author assumes that “the origin of luminous vision and of color vision is to be sought in the liberation of electrons under light stimulus within a photoelectric substance or substances existing in the retina.” The rhodopsin is such a photosensitive substance. The rods are considered the basis of brightness and the cones of color vision. The sensitizer for color vision—in the case of the cones—lies outside of the cones. Arguments are advanced to show that photochemical and photoelectrical processes are fundamentally alike. The following quotation gives the facts of photoelectric science that have a bearing on the present theory: “(1) The electron is liberated with a velocity which, normally, depends on the frequency of the light only; increasing as the wave length diminishes in such a way as to render the kinetic energy a linear function of the frequency. (2) The velocity is independent of the intensity (amplitude) of the light. (3) For equal intensities of light of different frequency, the light of highest frequency liberates most electrons. (4) For lights of the same frequency, the number of liberated electrons increases with the intensity. (5) The electron in most cases absorbs one quantum, the value of this quantum depending on the frequency according to the well-known equation $\epsilon = h\nu$, where h is Planck’s constant ($=6.57 \times 10^{-27}$ erg sec.) and ν is the frequency. In virtue of the absorbed energy, the electron acquires a certain velocity and pursues a certain free path in the medium till diverted by collision.” The various facts of color vision and of color blindness are then explained in terms of these principles. S. W. FERNBERGER (Pennsylvania).

348. BATES, M., A Study of the Müller-Lyer Illusion with Special Reference to Paradoxical Movement, and the Effect of Attitude. *Amer. J. of Psychol.*, 1923, 34, 46–72.

In the first part of the experiment the observers judged the relative extents between two pairs of dots which were successively presented by means of a tachistoscope. In certain of the series one or

both of the pairs of dots had either arrow-heads or feather-heads attached to them. With short exposures and figures almost wholly within foveal vision the illusion averaged 16 per cent of the standard extent, although under such conditions, eye-movement was practically eliminated. The judgments were based upon seen movement of the dots, displacement of the dots without movement, total extent between the dots, eye-kinaesthesia of contraction and expansion, movement of the wings, and "pseudo-movement." Illusory or paradoxical movements of the dots were of frequent occurrence and were not different introspectively from movements in the direction of objective displacement. In the region where illusory judgments occurred, there were many cases of conflicts of judgment due to opposing criteria, but the presence of more than one criterion did not always mean opposition. In the second section of the work the observers judged the relative extent of simultaneously presented black lines with wings of black, middle gray, or light gray, under instructions either to judge by total impression or to abstract as far as possible from the wings. Both the analytical attitude and the use of wings of a different tint operated to reduce the amount of the illusion. Introspective reports indicate that the use of such wings did to some extent aid analytical observation, while the use of wings similar to the lines was conducive to a taking of the figure as a whole. The numerical results indicate a possibility of objectively measuring attitudinal change (in this case, the effect of the shift in instructions is statable in terms of the increased brightness necessary to reduce the illusion by the same amount). It proved impossible in these experiments to reduce consciousness to the bare experience of extent from which the appearance of the *Nebenreize* was excluded. Yet the judgment did not issue from the *Nebenreize* directly, but only indirectly as they determine the extent of the primary sensory impression. We must interpolate the effect of the *Nebenreize* between the retina and the mental datum. G. J. RICH (Pittsburgh).

349. ZIGLER, M. J., An Experimental Study of the Perception of Stickiness. *Amer. J. of Psychol.*, 1923, 34, 73-84.

The perception of stickiness was produced by touching the observer's finger with a sticky substance and then removing it. The perception was analyzed into a "pull" phase, which was a dull, deep-seated pressure and which was only an incidental part of the experience, and a "breakaway" phase, which was the essentially

sticky part of the experience. The "breakaway" phase consisted of a field of light contact or pressure points, whose attributes showed determinate characteristics; the intensity of the light pressures or contacts showed a gradual increase and then a rather sudden decrease to a low or zero level of intensity; the duration of every sticky point in the field was noticeably sustained; and the point of maximal clearness shifted constantly and rapidly among the different pressures or contacts constituting the pattern. The "pull" without the "breakaway" failed to give the perception, and was frequently confused with a pressure. The perception of stickiness was produced by lifting the epidermis with a needle or needles and suddenly terminating the lifting. G. J. RICH (Pittsburgh).

350. DIMMICK, F. S., An Experimental Study of Auditory Tied-Images. *Amer. J. of Psychol.*, 1923, 34, 85-89.

A number of short musical phrases were played until the observers became familiar with them. They were then repeated with the omission of a single note. In all but a few cases the 5 O's (chosen at random) filled in the missing note in auditory imagery. In its attributive aspects, the supplied note approached very closely to the presented notes, differing only perceptually with respect to such textual characteristics as "richness" and "tone-color." The auditory tied-images have characteristics similar to the corresponding phenomena in vision. G. J. RICH (Pittsburgh).

351. ORTMANN, O., The Sensorial Basis of Music Appreciation. *J. of Compar. Psychol.*, 1922, 2, 227-256.

Displacing the orthodox attributes of tone in our current psychology of audition by three attributes, namely by *primary*, *secondary*, and *tertiary* attributes, and then by assigning only one primary attribute to auditory sensation, that of *extensity*, Ortmann presents a rather deductive, systematic treatment of the problem of musical appreciation. His article refers copiously to the literature and contains a bibliography of 36 titles. The primary attribute of extensity he subdivides into *transtensity*, *intensity*, and *protensity*. The collaboration of these three primaries results in the secondaries, chief of which is *quality*. The paper concludes with the following summarized results: (1) an important part of the enjoyment of music is nonauditory in character; (2) the system of Ortmann furnishes a psychophysiological basis for individual differences and

this basis can easily be demonstrated by an appeal only to the accepted principles of *association*; (3) "*brightness*" and "*roughness*" are explained and are shown to be secondary and not primary; and (4) the primary attributes of the simple tone, with the secondary and tertiary attributes, are sufficient to explain the most complex reactions to the most "*inspired*" compositions. H. R. CROSLAND (Oregon).

4. FEELING AND EMOTION

352. LARSON, J. A., The Cardio-Pneumo-Psychogram and its Use in the Study of the Emotions, with Practical Application. *J. of Exper. Psychol.*, 1922, 5, 323-328.

Author discusses records and curves secured in investigations of criminal suspects by means of verbal reactions, chronograph, pneumograph, and sphygmomanometer. The cardiorespiratory changes and the quantitative determinations of blood-pressure taken together furnish significant data for the detection of deception. C. C. PRATT (Harvard).

353. WASHBURN, M. F., FIELD, R., and WOLF, E. D., A Study of Revived Emotions. *Amer. J. of Psychol.*, 1923, 34, 99-103.

The subjects in the study were asked to recall incidents in which they had experienced anger, fear and joy, and to indicate the moment at which they succeeded in reviving the experience and report upon its intensity and bodily accompaniment. The revivals were less intense the more remote the time position of the original emotion. Revived anger seemed to fall away in intensity with time more rapidly than either joy or fear. In the case of joy there was a marked tendency for the more intense revivals to be made quickly; in the case of fear this tendency was less noticeable; and in the case of anger it was absent. A considerable number of bodily manifestations were reported, especially in connection with revivals of joy. G. J. RICH (Pittsburgh).

354. WASHBURN, M. F., HATT, E., and HOLT, E. B., Affective Sensitiveness in Poets and Scientific Students. *Amer. J. of Psychol.*, 1923, 34, 105-106.

A group of 33 students who had shown distinct poetic ability and a group of 34 students majoring in science were required to make

absolute affective judgments (on a scale of seven steps from extreme unpleasantness to extreme pleasantness) of nonsense syllables and of color combinations. The ratio of the sum of the number of judgments of extreme pleasantness and extreme unpleasantness to the number of judgments of indifference was computed as a measure of affective sensitiveness. The ratio was higher for both types of material with the group of poets than with the group of scientific students. G. J. RICH (Pittsburgh).

355. MEENES, M., Attention as a Condition of Affection. *Amer. J. of Psychol.*, 1923, 34, 117-122.

Using the method of paired comparisons, judgments were obtained of the relative pleasantness of two pairs of colors presented one above the other. Sometimes the observers were instructed to attend only to the right color of each pair, sometimes only to the left color of each pair, and sometimes to both colors in each pair. When the judgments are classified according to each color of the pair, the preferential orders of the colors are much more widely distributed for the colors attended to than for the colors attended from. The color attended to shows 63 to 85 per cent of maximal dispersion possible under the conditions; the color attended from only 4 to 20 per cent. The judgments are conditioned predominantly upon the colors attended to. Colors attended from, but presented with the colors attended to, have at most but slight effect upon the judgments. G. J. RICH (Pittsburgh).

356. ENG, H., Experimentelle Untersuchungen über das Gefühlsleben des Kindes. *Zeits. f. angew. Psychol.*, 1922, Beiheft 30, 140 S.

Gestützt auf die Erfahrungen der Vorgänger, stellt E. Die Ausdrucksercheinungen, die den Ablauf intellektueller und gefühls-mässiger Vorgänge begleiten, fest. Die Registrierung der Ausdruckssymptome erstreckt sich auf das Armvolumen, Höhe und Tempo des Pulses und auf das Tempo der Atmung. Untersucht werden Aufmerksamkeit, psychische Arbeit, die Komplexion beider, die Wirkung lust- und unlusterregender Sinnesreize, spontane Lustgefühle, Erregung, Depression, spontane Lustgefühle, intellektuelle Gefühle, ästhetische Gefühle. Jeder einzelne seelische Vorgang ist in gesetzmässiger Weise von bestimmten Veränderungen der Volumpuls- und Atmungskurve begleitet. Unterschiede zwischen

Kindern und Erwachsenen zeigen sich bei den spontanen Kurven. Es tritt beim Kinde eine stärkere spontane Tendenz zu steigenden Kurven zutage, mithin eine stärkere Neigung zu lustbetonter psychischer Tätigkeit. Aus den Ergebnissen ergibt sich folgende systematische Aufreihung der Gefühle: Aufmerksamkeits-, Tätigkeitsgefühl, Unlust, Lust, Depression, Erregung. Es werden besonders die ersten beiden, die in gleichartigen Untersuchungen oft für einander eingesetzt wurden, scharf gegeneinander abgegrenzt. H. BOGEN (Berlin).

5. MOTOR PHENOMENA AND ACTION

357. MEAKINS, J. C., Some Chemical Influences in Regard to the Endocrine Glands and the Central Nervous System. *J. of Ment. Sci.*, 1922, **68**, 367-374.

The author approaches this subject from the point of view of the influence of certain chemical substances on the general function of the animal organism. He says that it is difficult to separate many of these chemical actions as the functional activity of the endocrine glands and the nervous system are so intimately connected. In addition the active principles of some of the endocrine secretions are now identified as definite chemical compounds closely allied to other substances which may possibly be produced in the organism under pathological conditions. Apart from the possible effect which chemical bodies formed in the intestine may have upon the organism as a whole, there is the very important question of foodstuffs and their synthetization into living tissues. It is highly probable that many of the raw materials from which the various internal secretions are synthesized are dietary constituents. The whole study of the endocrine glands in recent years has made progress by enormous strides but it is a striking fact that too many theories have arisen which have but confused the issue. It behooves us in the future to keep our eyes fixed on the direct trail of scientific investigation and not be drawn aside by the mirage of theory based upon insufficient and oftentimes negligible fact. R. E. LEAMING (Pennsylvania).

358. SCHAFER, E. S., The Influence of the Internal Secretions on the Nervous System. *J. of Ment. Sci.*, 1922, **68**, 347-367.

The influence of the internal secretions is exerted by means of chemical substances—very few of which have been isolated or satisfactorily examined. Many of these substances closely resemble in

their action that of medicaments, especially such drugs as the alkaloïds. So far as their physiological action is concerned drugs can be classed into two divisions, viz., those which increase the excitability of irritable tissues, and incidentally induce their activity when quiescent; and those which diminish their excitability, and incidentally produce quiescence if administered during activity. Strychnine and morphine may be mentioned as examples. The author applies to the former group of substances the term "hormone" and calls their action "hormonic." To the latter group he assigns the name "chalone" and terms their action "chaloneic." He gives a general term "autacoid" to these drug-like substances produced within the body itself. The author discusses at some length the internal secretions of the generative organs, of the thyroid and the parathyroids and their physiological effects especially upon the nervous system. R. E. LEAMING (Pennsylvania).

359. HAMMETT, F. S., Temperament and Bodily Constitution. *J. of Compar. Psychol.*, 1921, 1, 489-494.

In discussing the reversible influence of body on temperament and temperament on body, the author presents a bibliography of ten references, and refers to his own work on the relation of emotional stability to metabolic stability and the resistance of the albino rat to the loss of parathyroid secretion, to Cannon's work on the influence of the emotions on glandular secretions, to Maranon's and Buscaino's investigations which support Cannon's findings in principle, and to his and Hatai's findings concerning the reactions of an isolated segment of the intestine of the albino rat to sodium carbonate. The author's thesis is that the bodily constitution determines temperament and the particular and concrete manifestations of temperament in the form of emotions in turn react back and induce changes in glandular secretions and in the resistance of the body tissues to the loss of parathyroid secretion. Hence, by exercising volition and by voluntary control one can prevent or modify one's emotions and hence modify one's temperament, which practical result is at variance with McDougall's teaching that natively determined factors of temperament "are but little capable of being modified by voluntary effort." H. R. CROSLAND (Oregon).

360. BABINSKI, J., Réflexes de Défense. *Brain*, 1922, 45, 149-184.

Discussion of the literature of the defensive reflexes. The author then presents a number of cases of mental derangement and studies

the reflexes in them. He finds that an exaggeration of defensive reflexes occurs in cases of lesion in the pyramidal tracts and that the intensity of the reflexes are in relation to the intensity of the lesion. Different sorts of reflexes are discussed. S. W. FERNBERGER (Pennsylvania).

361. CARR, H. A., and OSBOURN, E. B., Influence of Vision in Acquiring Skill. *J. of Exper. Psychol.*, 1922, 5, 301-311.

In order to create a problem in maze learning more nearly similar to the situations in which skill is acquired in ordinary life, the authors concealed the sight of the maze pattern, previously described, while allowing the subject to see the movement of the arm and stylus. One group of subjects learned the maze without the aid of vision; three groups were permitted the use of vision in the initial three, five, and seven trials respectively; and one group made use of vision throughout the whole process of learning. From the results of the experiment it appears that vision is always effective in reducing the number of trials and errors. The effect is greater in reducing the number of errors than of trials. It is not possible to state precisely the optimal amount of visual guidance for reducing to a minimum the number of trials and errors. It is clear from the data that visual conceptual factors play a large rôle in the learning process in the post-visual period when visual perceptual cues are excluded. If visual perception is suddenly introduced into the performance of a thoroughly mastered act, the effect is generally disruptive to the performance. The disruptive influence usually varies directly with the amount of visual guidance employed in the initial stages of the act of learning. C. C. PRATT (Harvard).

362. JOHNSON, B. J., Fatigue Effects as Measured by Sugar Content of Blood. *J. of Compar. Psychol.*, 1922, 2, 155-171.

While believing that his data do not warrant a conclusion as to the influence of different kinds and amounts of activities upon the sugar content of the blood, the author tries to stimulate further investigations of the concepts of fatigue and a reformulation of the factors involved in fatigue effects. The paper contains nine tables, three graphs of work or practice (output) curves, and three figures of the actual work of children in the maze, coördination test, the card-sorting discrimination test, and the Wells-Woodworth substitution (code) test. Tests also in tapping, target hitting, manipulating

the adding machine, gripping the dynamometer, and memory span for digits were administered. References are given to twelve pieces of literature dealing with fatigue products in the blood and to practice effects in the various tests mentioned. H. R. CROSLAND (Oregon).

363. GLOBUS, J. H., The Pathologic Findings in the Heart Muscle in Progressive Muscular Dystrophy. *Arch. of Neurol. and Psychiat.*, 1923, 9, 59-72.

A review of the literature, the report on a case illustrated with many photomicrographs, and the conclusions: The heart muscle does not entirely escape the myopathic process characteristic of progressive muscular dystrophy. (2) It shows changes of a milder degree than those found in the skeletal muscles. (3) A few cases have been reported in which definite myocardial changes were found, but they have not always been looked upon as a part of the generalized process. (4) Probably myocardial changes will be more frequently found in progressive muscular dystrophy if the heart is systematically studied in every case. (5) The involvement of the heart muscle plays an important rôle in the terminal course of the disease and is perhaps responsible for some of the conditions which lead to rapid and fatal issue. D. A. MACFARLANE (Boston Psychopathic Hospital).

364. KANTOR, J. R., The Integrative Character of Habits. *J. of Compar. Psychol.*, 1922, 2, 195-226.

Having eschewed in various journals the subjectivistic, the introspective, the dualistic, the physiological, and the *ultra* behavioristic tenets, and still, however, treating of a *psychobiological* organism, Kantor presents a deductive and rationalistic discussion dealing with habits. And while one may agree with him that psychology should be made more scientific—and while one may agree with him that some of the older views may have hindered the progress of a scientific psychology—one may still be inclined to believe that Dr. Kantor's method of purifying psychology, namely, by deductive discussion and speculation, has really been, through the ages, the greatest one deterrent to the fact of an accomplished psychological science. And, since he has eschewed so many principles, the reviewer finds it difficult to present an abstract of his paper which will really show the points which he has tried to develop. His paper is divided into eight sec-

tions, as follows: I. The General Nature of Habits; II. The Fundamental Psychological Basis of Habits; III. The Character of Habit Behavior Segments; IV. A Comparative Analysis of a Habit Behavior Segment; V. The Stimuli in Habit Reactions; VI. Types of Habit Responses; VII. How Habit Responses Are Acquired; and VIII. Modification of Action Through the Operation of Habits. In Dr. Kantor's own summary of the points which he has developed we find the following: (1) Habit responses are definite responses of the individual to specific stimuli; (2) there is close integration between stimulus and response; (3) points *one* and *two* enable one to regard habits as being both general and specific capacities (*i.e.*, habit may be regarded as a generic symbol for various types of morphological responses); (4) yet, nevertheless, the integrativeness of habits is responsible for the fact that each distinct habit connection comprises some specific response to a specific stimulus; (5) the principle of integration furnishes a basis for calling social, intellectual, and emotional reactions habits, not merely confining the term to overt reactions; (6) yet, notwithstanding point *five*, the term habit does not comprise all reactions acquired by the individual; (7) a repetition of Münsterberg's and Holt's objections to the old cortex-to-lower-center-relegation doctrine; and (8) while in various complex actions, attention and cognition reaction systems are autonomous acts intervening between stimulus and the final response by which latter the behavior segment is named, in the habit the action phase is so closely integrated with the stimulus situation that the attention and cognition reaction intermediaries are greatly syncopated and serve no elaborate function. H. R. CROSLAND (Oregon).

6. ATTENTION, MEMORY AND THOUGHT

365. BARTON, J. W., Repetition *versus* Other Factors in Learning. *Ped. Sem.*, 1922, 29, 283-287.

"Repetition" is inadequate as an explanation for learning, both for those cases where learning is complete after one occasion and for those where it is incomplete after very frequent trials. The principles of "readiness" and "effect" are to be more emphasized; and their interpretation as well as that of "repetition" is to be sought in terms of "degree of fitness" between the already organized scheme of responses (both nature and nurture factors) and the new impulse set up by the new presented situation. J. F. DASHIELL (North Carolina).

366. CARVER, D. J., The Immediate Psychological Effects of Tobacco Smoking. *J. of Compar. Psychol.*, 1922, 2, 279-302.

The effects of tobacco smoking were measured in the rapidity and accuracy with which reagents sorted cards, added digits, multiplied, operated the Burroughs adding machine, recalled opposite word-associations, threw arrows at a target, inserted a stylus in different sized holes, and made three standard shots in billiards. Two procedures characterized all test schedules, the *alternate day* procedure in which the reagent smoked just before the test on one day and on the next day rested without smoking, and the *before and after* procedure in which the experimental "sitting" was divided into two parts with a "smoking" or resting period between them and this in-between period was alternately filled by smoking and resting. It was found that smoking tended to decrease accuracy in fine muscular coördinations and in associative thought, although habitual smokers in a few cases became more inaccurate after missing their customary portion of tobacco-combustion. There was no indication that speed was decreased in complicated reactions; and thoroughly mechanized reactions were not deleteriously affected. It is suggested that if finer effects of tobacco use are to be ascertained these tests cannot be used—that separate tests of men and women are necessary—and the effects of tobacco on learning must be differentiated from the effects on habitual activities. It is urged that modern physiological investigations precede any attempts to measure the effects of smoking on mental reactions, and that rigid methods be instituted to keep the tested persons under control as regards smoking, rest, diet, mental and physical work, sex activity, etc. H. R. CROSLAND (Oregon).

367. DIMMICK, C. C., The Auditory Memory After-Image. *Amer. J. of Psychol.*, 1923, 34, 1-12.

Auditory memory after-images were produced by dictating sentences to the observers and suddenly breaking the dictation. All of the O's reported that the sentences finished themselves out in auditory imagery of the experimenter's voice. This imagery was of slightly less intensity and "richness" than the perception of the word, but did not differ significantly from the perception in duration or pitch. Auditory memory-images were then obtained by requiring the O's to recall auditorily sentences that had been previously read to them. Since none of the O's were auditory-minded, auditory memory-images

were obtained only by effort upon their part. The auditory memory after-images differed from the memory-images in their greater intensity and richness, in localization, and in their "persistence." The memory after-image did not require active calling up, and appeared occasionally when the O did not give a high degree of attention to the perception. The auditory memory after-image is a psychologically unique experience, differing from the memory-image but partaking in part of its characteristics and in part of the characteristics of an after-image (for which there is no evidence in the auditory field). G. J. RICH (Pittsburgh).

368. McNEIL, D., A Peculiar Transformation of Personality Due to Encephalitis Lethargica. *Amer. J. of Psychol.*, 1923, 34, 13-31.

Observations are reported of the personality of a patient before and after an attack of *encephalitis lethargica*. Although not affecting his intelligence, the disease changed the patient from quiet to talkative, from retiring to self-assertive, from likable to generally disliked, from truthful and conscientious to unreliable, from a good mechanic to a poor and untrustworthy one, from modest to self-opinionated and forward. In general, the transformations are those due to a paralysis of inhibitions, the patient's behavior resembling very much that of a man slightly under the influence of alcohol. Some of the effects of the disease have been slightly overcome by means of treatments with tethelin. G. J. RICH (Pittsburgh).

369. WASHBURN, M. F., and STEPANOVA, V., Absolute Judgments of Character Traits in Self and in Others. *Amer. J. of Psychol.*, 1923, 34, 96-99.

The members of three groups of students who were well acquainted with one another rated themselves and every other member of their group as either possessing or not possessing certain character traits, none of them unfavorable traits. Under these conditions, the observers tended to judge others as they judged themselves. They underestimated, as compared with the judgments of their companions, their own carefulness, industry and orderliness, and overestimated, as compared with the same standard, their own punctuality, enthusiasm, patience and thrift. G. J. RICH (Pittsburgh).

370. WASHBURN, M. F., HATT, E., and HOLT, E. B., The Correlation of a Test of Control of Visual Imagery with Estimated Geometrical Ability. *Amer. J. of Psychol.*, 1923, 34, 103-105.

The visual imagery of students in geometry was tested by requiring them to move about, as it were, mental images of geometrical forms. Efficiency in this test showed a good correlation with the teacher's estimate of natural ability in geometry. G. J. RICH (Pittsburgh).

371. TINKER, M. A., A Preliminary Study of the Psychology of Mathematical Adjustment. *Amer. J. of Psychol.*, 1923, 34, 112-117.

Three observers were given the task of drawing the best fitting line through a number of points on coördinate paper. Averaging ten trials on consecutive days, it was found that two of the observers made linear adjustments with an inaccuracy of about 1 per cent (and the third observer with an inaccuracy of 7 per cent) as compared with the conventional method of least squares. The O's did not, however, work by or think in terms of least squares. The psychology of adjustment is in part empathetic, but includes as an important factor the equation of the sums of positive and negative unsquared deviations. No "best" line can be defined, logically or psychologically, until a criterion of deviation from it is established. G. J. RICH (Pittsburgh).

372. PIORKOWSKI, K., Aufmerksamkeit niederer und höherer Ordnung und ihre Beziehung zum Begabungsproblem. *Zeits. f. päd. Psychol.*, 1922, 23, 380-382.

Wendet sich gegen die in einer Arbeit gleichen Titels vertretene Ansicht Vaertings, dass eine Entwicklung und Ausbildung der beiden Fähigkeiten, der Konzentration aus Interesse und dem Willen heraus, sich entgegenstehen, so dass jede Ausbildung und Uebung der einen Fähigkeit einen Rückgang der andern bedeutet. H. BOGEN (Berlin).

373. PAGEL, F., Am Wendepunkt der Seelenkunde. *Deutsche Schule*, 1922, 26, 364-372.

Der Verf. umreisst die Gedankenwelt Eduard Sprangers. Die bisherige Psychologie versuchte die Akte-Wirkungen des Seelischen auf den Gegenstand, "sinnvolle Bestimmungen von Gegenstandszusammenhängen"—und Erlebnisse—"diejenigen Leistungen des

Bewusstseins, durch welche die Stellung eines Gegenstandes im Zusammenhang einer Gegenstandsordnung sinnvoll erfahren wird"—ausschliesslich in Beziehung zur Natur zu setzen. Unter "Natur" ist dabei die wissenschaftliche Konstruktion zu verstehen, die wir der modernen Physik und Physiologie verdanken. Die von S. als Geisteswissenschaft bezeichnete Psychologie betrachtet die Erlebnisse und Akte von der Objektwelt aus, die sie als das Geistige oder den Geist anspricht. Die erlebte Wirklichkeit ist gegenüber der *konstruierten* keine einheitliche, vielmehr treten in ihr die verschiedenen Gegenstandsschichten gebunden an die Werte, die wir in ihnen erleben, verschieden hervor. Wertbeziehung ist aber Sinngebung. So wird die Wirklichkeit also in verschiedenem "Sinne" gedeutet.—Das individuelle Geistesleben vollzieht sich in Akten, Wertungen und Handlungen, denen auf der aufnehmenden Seite Erlebnisse, Werterlebnisse und Leiden gegenüberstehen. Ein Akt ist "fundiert," wenn sein Sinn den Sinn eines andern Bewusstseinsaktes erschliesst oder voraussetzt. Eine Handlung ist "motiviert," sofern sie geistig in einer Wertung begründet ist. Ein Einzelbewusstsein ist strukturiert, sofern es einen geschlossenen Leistungszusammenhang von Fundierungen und Motivationen bildet. Das Einzelbewusstsein ist also eine seelische Struktur, ein subjektiver Lebenszusammenhang, durch den Auffassungsakte, Werte und Handlungen zu einem gegliederten Leistungsganzen verbunden sind. Die geisteswissenschaftliche Seelenkunde ist also eine Strukturpsychologie. In jedem sinngebenden Akt sind alle Grundformen sinngebender Akte zugleich enthalten; in jedem geistigen Akt waltet die Totalität des Geistes. H. BOGEN (Berlin).

374. PEARSON, E. S., On the Variations in Personal Equation and the Correlation of Successive Judgments. *Biometrika*, 1922, 14, 23-102.

This paper deals with the problem of errors of judgment from the practical point of view of the astronomer or physicist or other scientist who wishes to know how reliable his measurements are. The practical treatment of errors of measurement implies the assumption that they are distributed at random about the mean measurement and in time as well. That neither of these assumptions is true, in general, is gradually being realized. The author of this paper carried out a series of experiments (1) in estimating a third of a line of constant length, (2) in estimating a half of a line, (3) in estimating

a period of ten seconds by counting "sotto voce," (4) in estimating a period of ten seconds without counting or other expedient, as far as possible (his description of his experience in this experiment is of psychological interest), (5) in making certain measurements of stellar spectra.

A judgment is considered to be a function of: (a) a secular change in the observer, assumed to be continuous throughout many series of judgments made at intervals of days or weeks, (b) a superposed "sessional" change taking place only during a series, and (c) a residual unanalyzable variable. The mathematical theory providing the method of treating these components separately is an adaptation of the variate difference correlation method.

From the lengthy and detailed discussion of the experiments I select the following points: (1) Correlation between successive judgments is found to be high when variation in judgment is great. (2) Sessional and secular changes, which are responsible for the correlation between successive judgments are found to be small and acting in opposite directions in the bisection experiments but large and in the same direction in the trisection experiments. (3) An interesting attempt is made to analyze a judgment as it is actually recorded into a "true" estimate—what the observer really intends, with a superposed error of expression or indication. The accidental, superposed errors appear to be about equal in the bisection and trisection experiments, but the true estimate appears to fluctuate much more in the latter than in the former—a result that is certainly in agreement with expectation. (4) Finally, a coefficient is deduced which measures the correlation between a true estimate (freed from accidental error) and the immediately preceding one. This coefficient is found to have very nearly the same value for all the experiments, and the author suggests that this may be a "fundamental constant, not varying much for different types of observation, but perhaps varying considerably for different observers." C. R. BROWN (Michigan).

7. SOCIAL FUNCTIONS OF THE INDIVIDUAL.

375. MALAN, G. H. T., The Behavioristic Basis of the Science of Law. *Amer. Bar Assn. Jour.*, 1922, 8, 737-762.

Up to now the law has been discussed from the basis of introspective psychology. The author tries to show that it should be more properly based on the fundamental assumptions of behavioristic

psychology. "The constitutive aims of Legal Science are its own and peculiar to it, but its procedure, methodologically considered, it has in common with the Psychological Science of Behavior." The author then analyzes different types of reflexes and reactions and indicates which are of interest and of importance for the legal profession. S. W. FERNBERGER (Pennsylvania).

376. MCCLATCHY, V. R., Differences in the Oral Responses to Words of General and of Local Significance. *J. of Exper. Psychol.*, 1922, 5, 312-322.

This investigation in free association was concerned with a study of the nature of oral responses of ninety college students to words of general and local significance. Words of local significance, as contrasted with words of general significance, seemed to elicit a greater variety of responses, to create more numerous possibilities of inhibitions, and to call out responses of a more intimate and personal nature charged with considerable feeling tone. There was some evidence that the quickness of response to general words was due to the firm establishment of their associations. C. C. PRATT (Harvard).

377. BECKWITH, M. W., Some Religious Cults in Jamaica. *Amer. J. of Psychol.*, 1923, 34, 32-45.

The Revivalists, whose practices and accounts of religious experiences are described, represent a grafting of Christian forms onto the demon-driving business of the *Obi-men*. Their methods are in many respects similar to African beliefs and practices. The *Isaiahs* are the followers of a leader whose religious experiences appear to be similar to those of the Revivalists. The *Bedwardites* are also followers of a single leader, a dreamer rather than a pretender. Their ceremonies are Christian in nature and are especially characterized by fasting and purification, elements which suggest the influence of the Apostolic Church. G. J. RICH (Pittsburgh).

378. PIORKOWSKI, H., Beiträge zur experimentellen Reklamepsychologie. I. Psychotechnische Auslese der geeignetsten Schutzmarke. *Prakt. Psychol.*, 1922, 3, 351-364.

Die Praxis forderte, die Vereinigung zweier grosser Industrieunternehmen zum Vertrieb eines gemeinsamen Fabrikates durch ein gemeinsames Symbol zum Ausdruck zu bringen. Die Schutzmarke sollte als Pionier für die Gemeinschaft werben, den Ruf der Firmen

sichern und mit befestigen helfen. Die psychotechnische Untersuchung sollte das geeignetste Warenzeichen unter einer Reihe von Entwürfen heraussuchen. Hierbei war zu berücksichtigen, dass die Marke leicht auffassbar auch bei nur flüchtigem Hinblicken sein sollte, dass sie mit grosser Schnelligkeit und Eindringlichkeit auf das Bewusstsein wirken sollte, das Gefühl der Bekanntheit soll nach kürzester Zeit schon vorhanden sein und schliesslich soll die Marke noch assoziative Brücken zum Fabrikat hin enthalten.—Es gelang mit Hilfe verschieden variierter tachistoskopischer Verfahren, das diesen Anforderungen am besten entsprechende Symbol herauszufinden, wobei bemerkenswert ist, dass die psychologische Untersuchung ein anderes Urteil fällte, als eine Reihe auswählender Praktiker. H. BOGEN (Berlin).

379. PIORKOWSKI, H., Beiträge zur experimentellen Reklamepsychologie. II. Untersuchungen über die Substitutionsmöglichkeiten bei Werbemitteln. *Prakt. Psychol.*, 1922, 3, 364–372.

Psychotechnische Untersuchung einer beabsichtigten Warenmarkenänderung einer Firma. Es war beabsichtigt, zwischen den alten und den neuen Entwurf ein Uebergangswarenzeichen einzuschieben, das die Gedächtnisresiduen des ersten Warenszeichens und auch Bestandteile des Endentwurfes enthalten sollte. Die psychologische Untersuchung erweist den Weg als für den vorliegenden Fall nicht gangbar. H. BOGEN (Berlin).

380. KLÖTZEL, C. Z., Psychologische Grundlagen der Filmreklame. *Prakt. Psychol.*, 1922, 3, 372–376.

Ein Branchenpraktiker des Werbewesens zeigt die Ansatzstellen für die von der Psychologie zu leistenden Hilfen auf. H. BOGEN (Berlin).

381. SCHÜTZ, W. v., Die Messung von Kraftquellen zur Betätigung künstlicher Glieder. *Prakt. Psychol.*, 1922, 3, 300–311.

Messung der Arbeitsleistung am Kunstglied und am Körper werden unter möglichst weitgehender Annäherung an den praktischen Gebrauch vorgenommen und miteinander verglichen. Kraftablauf, Wegabnahme, bezw. vergrösserung während der Kunstgliedbetätigung lassen sich genau verfolgen. Auf Grund derartiger Messungen ist es möglich, dem Arzt in Kilogramm und Zentimetern zu sagen, warum von einem Amputierten ein Kunstglied nicht betätigt werden

kann. Dem Konstrukteur von Kunstgliedern kann man sagen, wie viel er dem menschlichen Körper bei der verlangten Leistung zumuten darf. Festgestellt wurde ferner, welche Zusammenstellungen von Kunstarmen und -händen die für verschiedene Grade der Amputation günstigsten sind. H. BOGEN (Berlin).

382. LEMAITRE, A., Les Avatars d'une Servante Mystique. *Arch. d. Psychol.*, 1922, 18, 193-207.

Description of the development of a case with religious mystical manifestations. S. W. FERNBERGER (Pennsylvania).

383. STRELLER, J., Erfahrungen mit den Methoden von Lipmann-Stolzenberg zur Auslese hochwertiger Facharbeiter der Metallindustrie. *Zeits. f. angew. Psychol.*, 1922, 21, 166-183.

Die Anwendung der Prüfmethode, die sich auf augenmass, Formensinn, Tastgefühl, Druckempfindlichkeit der Gelenke, Handgeschicklichkeit, technisches Verständnis und Intelligenz erstrecken, wurde in ihren Ergebnissen, die an der Dresdener Berufsberatungsstelle gewonnen worden sind, mit denen aus Berlin verglichen, wobei sich eine gute Uebereinstimmung zeigte. Es scheint sich die Vermutung zu bestätigen, dass die geistig Reinen auch den grössten Prozentsatz der Handgeschickten aufweisen. Ueber die Bewährung der Methode ist vorerst nur soviel zu sagen, dass von den geprüften Lehrlingen noch keiner von seinem Meister aus der Lehrstelle entlassen worden ist. H. BOGEN (Berlin).

8. SPECIAL MENTAL CONDITIONS

384. MOSSE, K., Ueber Suggestion und Suggestionstherapie im Kindesalter. *Zeits. f. Kinderforsch.*, 1922, 27, 65-78.

Ergebnisse aus der Praxis einer Universitätskinderklinik, die durch Untersuchungen an Kindern aus Hilfsschulen und Kindergärten noch gestützt werden. "Kinder sind schon mit drei Jahren suggestibel. Gesunde normale Schulkinder erliegen etwa zu 80% Suggestionen. Die jüngeren sind suggestibler als die älteren. Das trifft nicht auf die Neuropathen und Hysteriker zu, bei denen die Suggestibilität mit zunehmendem Alter wächst. Schwachsinnige Kinder sind weniger suggestibel als normale, etwa nur zu 50%. Wegen der hohen Suggestibilität der Kinder muss die Frage im

Gerichtsverfahren vermieden werden. Der Erfolg der einzelnen Suggestionenmittel ist wesentlich von der Persönlichkeit des Suggestierenden abhängig." H. BOGEN (Berlin).

385. FLOURNOY, H., Civa Androgyne. *Arch. de Psychol.*, 1922, 18, 235-254.

Psychoanalytic interpretation of the symbols of this Hindu god such as the face with the three eyes; the serpent and the river; the man's head with the woman's head emerging from it and the god issuing from the mountains. S. W. FERNBERGER (Pennsylvania).

386. MARCINOWSKI, Die Psychoanalyse im Dienste von Arbeit und Arbeitgeber, ihre Beziehung zu Psychotechnik und Taylorismus. *Prakt. Psychol.*, 1922, 3, 319-333.

Nach M. hat die Experimentalpsychologie innerhalb der Betriebsorganisation in der Hauptsache *aufbauende* Arbeit zu leisten. Sie kümmert sich dabei nicht um Leistungsabsetzungen, die aus unzweckmassigen Hemmungen und Widerständen heraus entstehen. Die Beseitigung solcher Leistungshemmungen ist die Vorbedingung zur Heranbildung leistungsfreudiger Menschen. Diese Arbeit innerhalb der Betriebsorganisation zu leisten, ist die Psychoanalyse berufen. Ihre Arbeitsgebiete sind das Verhältnis des Arbeiters zum Vorgesetzten, zum Arbeitskollegen und die Verhinderung von Betriebsstörungen, die in affektbedingten Fehlleistungen ihre Ursache haben. Ihre Arbeitsmethoden schöpft sie aus den Erkenntnissen der Psychoanalyse über die Stellung des Kindes zu Eltern und Erziehern, über seine Stellung im Geschwisterkreise und aus der Psychopathologie der Alltags. Die Psychoanalyse muss verlangen, dass die Leiter psychotechnischer Abteilungen nicht nur betriebsvertraute Ingenieure sind, sondern sie sind auch mit den Gesetzen und Ergebnissen der Tiefenpsychologie vertraut zu machen. H. BOGEN (Berlin).

9. NERVOUS AND MENTAL DISORDERS

387. BRUCE, A. N., The Out-patient Treatment of Early Mental Disorder. The Neurological Clinic, and Some of its Functions. *J. of Ment. Sci.*, 1922, 68, 385-395.

One of the important advances in the science of medicine in recent years is the recognition of the essential unity of the sciences of

neurology and psychiatry. A specialist in nervous disorders must possess not only a knowledge of organic neurology and of psychiatry but also of psychology, both normal and abnormal. For practical purposes the nervous system may be divided into three levels of activity—the vegetative, the sensori-motor, and the psychic. The first of these is in close functional relations with the endocrine glands. The type of tool employed at this physico-chemical level is the "hormone" and the symptomology of this region constitutes the borderline of neurology and internal medicine. The type of tool used at the second level is the reflex and the function is further integration by providing the means for the balanced interrelations of the various motor organs of the body. It is to the symptomatology of this group that the term "neurology" is usually applied. The third, the highest, the psychic level, is the most complex. The tool here employed is the symbol, and the symbol becomes a carrier of energy which is translated into conduct. The function of this level has to do especially with the relation of the individual to his social environment.

The cases which come before a neurological clinic, the author believes, may be classified into the following groups: neurasthenics where this symptom is merely part of some *general disease* such as phthisis, diabetes, etc.; *endocrinopathies*; *organic nervous diseases*; the *epileptic group*; *mental defectives*; the *criminal degenerate*; cases found to be *certifiable* on first examination; "*functional nervous disorders*" and "*incipient mental disorders*" (the largest group of all). A brief sketch of the procedure of the clinic is outlined and a number of arguments are advanced for the establishment of such out-patient clinics. R. E. LEAMING (Pennsylvania).

388. STODDART, W. H. B., The Rôle of the Endocrines in Mental Disorder. *J. of Ment. Sci.*, 1922, 68, 374-378.

The object of this paper is to raise the question whether the endocrines are not secondary to psychical disturbance but primarily caused by it. The author states that there is abundant evidence that exophthalmic goiter is of psychical origin. He discusses in some detail digestive disorders in anxiety neurosis and anxiety hysteria. He states that the blood of epileptics is always positive to adrenal tissue. This hyperadrenalism is possibly due to anxiety and fear of impending attacks. The author wishes to draw attention to the fact that purely psychical mechanisms are capable of modifying the secretion of endocrines, and thus to produce considerable and even gross organic changes. R. E. LEAMING (Pennsylvania).

389. MOTT, F., The Genetic Origin of Dementia Precox. *J. of Ment. Sci.*, 1922, 68, 333-347.

From investigations which he has been conducting for some time, the author concludes that it is better to speak of primary dementia, which may occur either in the preadolescent period, adolescence or postadolescence. Moreover, he is of the opinion that all psychoses belong to one group and are genetic in origin. In those forms of psychoses in which recovery takes place—for example, confusional insanity or exhaustion psychosis, benign stupor, periodic insanity, or manic-depressive insanity—we may assume there is a suspension of neuronic function in the highest psychic level; but all these conditions, he has found, may end in a terminal dementia, in which the changes in the reproductive organs and in the brain do not differ from those met with in the primary dementia of adolescence, the dementia indicative of a suppression of function. In the primary dementias, naturally, the symptoms may be partially due to a suspension, and partially to a suppression of function, and he would explain partial remission of symptoms by a partial restoration of function in neurones in which the nuclear change was either not present or not advanced. He explains his conclusions in detail. He defines primary dementia and draws some important conclusions regarding the nature of cells, neurones, genetic inadequacy and lack of vital durability. R. E. LEAMING (Pennsylvania).

390. ROBERTSON, G. M., The Hospitalization of the Scottish Asylum System. *J. of Ment. Sci.*, 1922, 68, 321-333.

"On taking a broad survey of the numerous changes that have been introduced into the asylum system of Scotland during the last two generations, we can crystallize the essential features of these developments into two simple yet comprehensive ideas or formulæ. These are, firstly, the abolition of prison features, which are an inheritance from the past, by the substitution of continuous personal attention; and, secondly, the hospitalization of the asylum by the introduction, as completely as possible, of the methods employed in hospitals for investigating, treating, and nursing disease, which still remains the ideal for the future. The effects of these changes have been so great that they might correctly be described as revolutionary, were it not that the process, though still incomplete, has been so gradual. The patients, who in former days were often unruly and even dangerous, have become so much more calm and orderly that

those whose recollections go back nearly forty years ask themselves, 'Has the type of insanity changed to one with milder symptoms?' . . . Lastly, the tone and whole atmosphere of the institution is different. It is at once more human, more sympathetic and more medical. When, then, the medical officers of asylums have been increased in number and have received special training in psychiatry and when the laws cease to place a prison stigma on asylums and their inmates, and to obstruct by legal technicalities the admission and treatment of patients in the early and curable stages of mental disorder, then will we attain the exalted ideal we have cherished and that has dominated our activities." R. E. LEAMING (Pennsylvania).

391. MIDDLEMISS, J. E., Notes from a Psychotherapeutic Clinic. *J. of Ment. Sci.*, 1922, **68**, 379-384.

The cases which come to this clinic are selected only by the fact that etiologically they are all more or less related to the traumas of warfare and ostensibly suitable for mental therapy of one sort or another. The clinic acts as a sort of clearing house for the neuroses and psychoneuroses of the war wherein the diagnosis may be confirmed or modified, and from which cases which are unsuitable for out-patient treatment may be drafted to mental hospitals, epileptic colonies, and neurological hospitals, according to their kind and degree. The author gives the most common symptoms of these states and his method of procedure in treating these cases. He sketches briefly one or two cases as examples. R. E. LEAMING (Pennsylvania.)

392. HURST, A. F., and BELL, J. R., The Pathogenesis of Subacute Combined Degeneration of the Spinal Cord, with Special Reference to its Connection with Addison's (Pernicious) Anaemia, Achlorhydria and Intestinal Infection. *Brain*, 1922, **45**, 266-281.

Discussion of the relation of pernicious anemia with subacute combined degeneration of the spinal cord. Presentation of case material with recommendations for treatment. S. W. FERNBERGER (Pennsylvania).

393. CUSHING, H., The Meningiomas (Dural Endotheliomas): Their Source, and Favoured Seats of Origin. *Brain*, 1922, **45**, 282-316.

Pathological and histological study of the tumors of the meninges. The source of them seems to be certain cell clusters in the arachnoid

which in middle life have a tendency to undergo tumefaction. The situation of the tumors is discussed in an effort to make preoperative diagnosis more certain. S. W. FERNBERGER (Pennsylvania).

394. JELLIFFE, S. E., Psychopathology and Organic Disease. *Arch. of Neurol. and Psychiat.*, 1922, 8, 639-651.

Dr. Jelliffe comes forth as a metaphysician and repeats his fealty to Freud. After putting forth certain of his "reflections" on life and the stuffs and trends and developmental factors whereof it consists, and presenting a little revision, with the aid of a curious little schemata, of the notion of recapitulation so that it shall include, as stages through which the human animal passes, the archaic, organic, narcissistic, and social periods, he presents a case which showed a cardiovascular-renal syndrome and which had stubbornly resisted all therapy and had proved a thorn in the flesh of the physicians and internists (who work, for the most part, so the writer says, at the physiochemical level), and shows how it yielded to the psychoanalytic technique. D. A. MACFARLANE (Boston Psychopathic Hospital).

395. HUNT, J. R., The Striocerebellar Tumor. A study of the nature and localization of the combined form of Organic Tremor. *Arch. of Neurol. and Psychiat.*, 1922, 8, 664-678.

An involved and detailed account of factors, possible and empirical, which contribute to tremors, especially tremors of "intention." A complete case history and necropsy is presented, upon which part of the discussion is based. It is concluded that there is a separate clinical entity in the form of a tremor having, as its basis, a joint involvement of the corpus striatum and the cerebellum. D. A. MACFARLANE (Boston Psychopathic Hospital).

396. BROCK, S., and MARGARETTEN, I., Pyramidal and Extrapyramidal System Involvement in Epidemic Encephalitis. *Arch. of Neurol. and Psychiat.*, 1922, 8, 660-663.

A presentation of 100 cases, classified as to type and signs of pyramidal involvement. In half the cases showing pyramidal tract involvement, extrapyramidal involvement coexisted. The proportion in the reverse relationship was much smaller. It was stressed that these two types of involvement do not necessarily appear simultaneously. D. A. MACFARLANE (Boston Psychopathic Hospital).

397. GOODHART, S. P., Post Encephalitic Deformities of Motion: A lecture illustrated by Motion Pictures. *Arch. of Neurol. and Psychiat.*, 1922, 8, 652-659.

Of course, the pictures are lacking. But the article describes in considerable detail the static, kinetic, and synergistic disorders as they appeared on the screen. The disordered movements which include the tic, myoclonia, choreiform, and athetoid movements, are often bizarre and represent almost every type of abnormal motor activity. The statement is made and repeated, however, that "the elements of motor deformity in each case are analogous and in some instances identical—suggesting a definite relationship perhaps even between the underlying pathologic etiology." D. A. MACFARLANE (Boston Psychopathic Hospital).

398. DUNLAP, C. B., Recent Studies on Spirochetes in General Paralysis. *Arch. of Neurol. and Psychiat.*, 1922, 8, 589-607.

A summary, with comments, on the work of Jahnel, Sioli, and Hauptmann. The writer's conclusions (abridged) are: (1) Jahnel has devised an excellent stain with which to study the spirochete. (2) Spirochetes are usually found in the frontal lobes, in the middle and deep layers of the gray matter. (3) Spirochetes may live many hours after the death of the patient, but may change their position *post mortem*. (4) Spirochetes in G.P. are either diffusely scattered or grouped in foci. They have no special relation to particular elements in the nervous system with the possible exception of the blood vessels. (5) The time and paths of entry into the nervous parenchyma in G.P. are not yet determined. (6) The spirochete of G.P. is probably a syphilitic organism, altered biologically by various influences. (7) The organisms, though not found in the general organs of the body, may be found in the mesoblastic tissues, pia mater and in the aorta. (8) The terms "parenchymatous neurosyphilis" and "interstitial neurosyphilis" seem hardly justifiable in the light of present studies. (9) Spirochetes have been demonstrated in the spinal pia-arachnoid in tabes. (10) Treatment of G.P. need not be absolutely hopeless. D. A. MACFARLANE (Boston Psychopathic Hospital).

399. ELSBERG, C. A., and STOOKEY, B. The Mechanical Effects of Tumors of the Spinal Cord. *Arch. of Neurol. and Psychiat.*, 1922, 8, 502-513.

The writers' own conclusions follow: "(1) Tumors on the anterior and anterolateral aspects of the spinal cord are relatively fre-

quent and form about one-third of all cases. (2) Although many patients with spinal cord tumors have no pain at the onset, the large majority have some objective sensory disturbance as an early symptom. (3) In some patients, objective sensory disturbances are absent for a long period and only appear after a lumbar puncture has been performed. (4) Tingling, coldness, burning and other paresthesias are not rare in extramedullary growths. (5) If the tingling occurs in the contralateral limb, below the level of the growth, there is considerable probability that the tumor lies on the ventrolateral aspect of the cord. (6) Intradural tumors adherent to the dura and extradural growths not infrequently press the cord to the opposite side of the spinal canal and cause early motor symptoms on the side of the body opposite that of the tumor. (7) If the signs of motor and sensory disturbances become aggravated after lumbar puncture and withdrawal of fluid, it is probable that the growth is either extradural or intradural, and adherent to the inner surface of the dural membrane. (8) Tenderness of a spinous process at the vertebral level of the lesion points to a bone disease; tenderness of spines well below the vertebral level of the growth points to an intradural extramedullary tumor." D. A. MACFARLANE (Boston Psychopathic Hospital).

400. WECHSLER, I. S., and BROCK, S., *Dystonia Musculorum Deformans*. *Arch. of Neurol. and Psychiat.*, 1922, 8, 538-552.

A report on six cases. The writers' conclusions: (1) There exists a myostatic variety of dystonia musculorum deformans as contrasted with the usual myokinetic form. (2) Phenomena of decerebrate rigidity may frequently be observed in dystonia musculorum deformans. (3) All cases of dystonia have an underlying postural background, one of the manifestations of which is the phenomena of decerebrate rigidity. (4) The myostatic and myokinetic phases of dystonia, which may be observed in all cases, are capable of dissociation. Either the static or kinetic phase may dominate the clinical picture. (5) The involvement in dystonia may be segmental in character. (6) In dystonia there occur not infrequently signs of other striatal diseases which point to a common anatomic and physiologic relationship. D. A. MACFARLANE (Boston Psychopathic Hospital).

401. ADSON, A. W., and OTT, W. O. Results of the Removal of Tumors of the Spinal Cord. *Arch. of Neurol. and Psychiat.*, 1922, 8, 520-537.

A statistical résumé of the Mayo Clinic Series from 1910 to 1922. The data are handled under the headings: types of tumor, duration of symptoms, root pain, spinal fluid findings, location of tumor, removal of tumor, end results, operations, postoperative care, and convalescence. Many cuts, diagrams, and tables are included. D. A. MACFARLANE (Boston Psychopathic Hospital).

402. SACHS, B., Shall We Decompress for Choked Disc? *Arch. of Neurol. and Psychiat.*, 1922, 8, 515-519.

In a series of 38 cases in which decompression was performed to relieve choked disc, 29 showed no recession, 4 showed distinct improvement, and 5 showed slight recession. ". . . there would appear to be strong corroboration of the impression that decompression operations, pure and simple, promise little . . ." At times, as a palliative measure, in case of intense pain or impending blindness, decompression may be indicated. D. A. MACFARLANE (Boston Psychopathic Hospital).

403. FREEMAN, W., Tuberos Sclerosis. *Arch. of Neurol. and Psychiat.*, 1922, 8, 614-629.

An article replete with cuts and photomicrographs. The writer's conclusions follow: "The cerebral changes in tuberous sclerosis are: (1) Abnormal differential of germinal cells during the middle fetal months with the production of neuroglial cerebral sclerosis and subependymal tumors. (2) Incomplete differentiation of ganglion cells with the production of bizarre types. (3) Persistence of the external granule layer of the cerebral cortex. (4) Agenesis of myelin sheaths in the sclerotic areas and underlying white matter. (5) Calcareous degeneration of the walls of vessels in the subependymal tumors. (6) Localized microgyria. In addition, in this particular case there was dilatation of the perivascular lymph spaces with cavity formation. There was no involvement of the projection tracts." D. A. MACFARLANE (Boston Psychopathic Hospital).

404. PARKER, H. L., Disturbances of Respiratory Rhythm in Children. A Sequela to Epidemic Encephalitis. *Arch. of Neurol. and Psychiat.*, 1922, 8, 630-638.

After reviewing briefly some of the literature dealing with respiratory disturbances in epidemic encephalitis, the writer adds his report

on eight cases to emphasize the fact that this is still another "syndrome that has to be added to the kaleidoscopic picture of epidemic encephalitis." "Essentially this syndrome consisted of assuming the erect posture, breathing noisily, holding the breath with bodily contortions and releasing the breath in a position best suited for complete expiration. Cyanosis with partial loss of consciousness, falling, and petit mal-like attacks were common and present in three cases, and all the patients had the marked insomnia and metamorphosis of character so well described by earlier observers." D. A. MACFARLANE (Boston Psychopathic Hospital).

405. FRAZIER, C. H., and SPILLER, W. G., An Analysis of Fourteen Consecutive Cases of Spinal Cord Tumor. *Arch. of Neurol. and Psychiat.*, 1922, 8, 455-501.

Contrary to the opinion of Dr. Sachs, that only the occasional patient with a spinal tumor has any pain whatsoever, the present writers stress the point that in 13 of the 14 cases reported, pain was the initial and conspicuous symptom. The article treats of the paresthesias and other subjective symptoms, segmental diagnosis, functional recovery and surgical problems. It contains diagrams of the cord conditions accompanying the lesions, diagrams of the body surfaces showing the areas of sensory and motor disturbances, and many cuts showing positions and appearances of the tumors themselves. The histories of the cases are included. D. A. MACFARLANE (Boston Psychopathic Hospital).

406. LENNOX, W. G., Neurosyphilis Among the Chinese. *Arch. of Neurol. and Psychiat.*, 1923, 9, 26-33.

The writer's summary: Testimony of individual observers and reports of general hospitals agree that in China syphilis is relatively more common and neurosyphilis relatively less common than in America. One explanation for this apparent racial discrimination is the probability that, for reasons named, many cases of neurosyphilis among the Chinese have been overlooked. In a teaching hospital in Peking, search for these cases revealed a proportion comparable with that found in teaching hospitals in America. An unusual proportion of the Chinese patients have cord lesions of vascular origin. Sixty-five cases of neurosyphilis are reported in which spinal fluid examination confirmed the clinical diagnosis. D. A. MACFARLANE (Boston Psychopathic Hospital).

407. HASSIN, G. B., and ROTMAN, D. B., Clinical Notes on the Pathology in a Case of Epidemic Encephalitis Complicated by a Psychosis. *Arch. of Neurol. and Psychiat.*, 1923, 9, 22-25.

A case history, including an account of the course of illness and the complete histopathologic report. The case is described as a combination of diffuse inflammatory and degenerative phenomena. D. A. MACFARLANE (Boston Psychopathic Hospital).

408. FRAZIER, C. H., and SPILLER, W. G., Section of the Antero-lateral Columns of the Spinal Cord (Chordotomy). Discussion of the Physiologic Effects and Clinical Results in a Series of Eight Cases. *Arch. of Neurol. and Psychiat.*, 1923, 9, 1-21.

"The operation will not be entirely successful in every case in which it is employed—some pain fibers occasionally will escape the knife—but the operation has now been performed sufficiently often to justify a belief in its efficacy." The case histories are given in detail. D. A. MACFARLANE (Boston Psychopathic Hospital).

409. STEVENSON, G. S., Spirochete Stain in Multiple Sclerosis. *Arch. of Neurol. and Psychiat.*, 1923, 9, 88-89.

The presence of the spirochete has been suggested, among other things, as a possible etiology of multiple sclerosis. The results of the investigation of four cases, leads the writer to draw the following conclusions: "In the study of thirty-seven sections from four cases of multiple sclerosis stained by Jahnke's new method no spirochetes were found. These studies indicate that spirochetes are absent or infrequent in multiple sclerosis tissue. Spirochetes held to be associated with multiple sclerosis, if present, probably cannot be demonstrated by the most dependable silver stains now available." D. A. MACFARLANE (Boston Psychopathic Hospital).

410. GIBBS, C. E., Sex Development and Behavior in Male Patients with Dementia Praecox. *Arch. of Neurol. and Psychiat.*, 1923, 9, 73-87.

A statistical study with no control data with which to compare the findings. Such items as size of testes, distribution of pubic hair, development of beard, scrotal implant, sex behavior, marriage, etc., are discussed. D. A. MACFARLANE (Boston Psychopathic Hospital).

411. MCKINLEY, J. C., Lesions in the Brain of a Patient with Postencephalitic Paralysis Agitans. *Arch. of Neurol. and Psychiat.*, 1923, 9, 47-58.

A complete case history of a patient displaying, as a residuum of epidemic encephalitis, a condition similar to paralysis agitans. The histopathologic findings are especially exhaustive and include many photomicrographs. D. A. MACFARLANE (Boston Psychopathic Hospital).

412. DOYLE, J. B., A Study of Four Cases of Glossopharyngeal Neuralgia. *Arch. of Neurol. and Psychiat.*, 1923, 9, 34-46.

The article gives the anatomy of the parts under discussion, a review of the scanty literature on the affections of the ninth nerve including short synopses of cases presented by former writers, and then presents four cases of glossopharyngeal neuralgia observed in the Mayo Clinic. A case of trifacial neuralgia is also presented. The writer concludes that glossopharyngeal neuralgia is a definite clinical entity, differing from trifacial neuralgia only in the area of distribution of pain. The afferent fibers of the sphenopalatine ganglion concerned with the innervation of the nasopharynx are not derived from the trigeminal nerve. D. A. MACFARLANE (Boston Psychopathic Hospital).

413. FIEBIG, M., Einiges über die infantile Pseudobulbärparalyse. *Zeits. f. Kinderforsch.*, 1922, 27, 198-203.

Es wird die "reine" Form der infantilen Bulbärparalyse beschrieben, diejenige Form, bei der die sprachlichen (paralytischen oder spastischen) Symptome im Vordergrund stehen und Störungen der Intelligenz so gut wie ganz zurücktreten. Grösseres Gewicht wird noch auf die Forderungen, die an die Schule für eine zweckentsprechende Behandlung gerichtet werden müssen, gelegt. H. BOGEN (Berlin).

414. VISHER, J. W., A Study in Constitutional Psychopathic Inferiority. *Ment. Hyg.*, 1922, 6, 729-745.

This is a detailed psychological and statistical study of 50 psychopaths in a U. S. Public Health Service Hospital. The author has grouped these patients into such types as (1) inadequate-personality, (2) hobo, (3) pathological-liar, (4) drug-addict,

(5) criminal. From his experience, the author concludes that the concept of constitutional psychopathic inferiority should be clarified; that the adult psychopath resists psychotherapy, reeducation and the profits from hospital treatment. About the best one can do is to find a suitable vocation for such individuals. R. H. WHEELER (Oregon).

415. POLLOCK, H. M., Alcoholic Psychoses Before and After Prohibition. *Ment. Hyg.*, 1922, 6, 815-825. R. H. WHEELER (Oregon).

10. INDIVIDUAL, RACIAL AND SOCIAL PSYCHOLOGY

416. VISHER, S. S., and HAVERSTOCK, G., "Who's Who" Among American Women. *Sci. Mon.*, 1922, 15, 443-447.

The distribution of birthplaces of 1551 women listed in "Who's Who in America," Volume XI, shows the New England district to have the most prominent share, southern and western districts the least. The leading states are, in order, New York, Massachusetts, Ohio, Pennsylvania, Illinois, Indiana, and Minnesota (or Maine?). Some factors probably making for the lower production of intellectual women in South or West or both are: fewer schools, less emphasis on educational ideals, tendency to earlier marriage, less tendency of intellectual to immigrate, enervating climate. The occupations of the women listed are, in order of frequency, writing, education, social work, art, acting, singing, editing, medicine, and others, over a wide range. Eighty-eight per cent of the biographies showed training above the secondary school, and of these one half were trained in women's colleges. J. F. DASHIELL (North Carolina).

417. MARICHELE, H., La Rééducation auditive chez les Sourds-muets et chez les autres Sourds. *J. de Psychol.*, 1922, 19, 769-794.

The article starts with a historical statement of the methods employed in the education of the deaf. The author then takes up the question of auditory differentiation among the deaf. Along with the usual methods of massage and of psychological education, the author advocates a method of graphic registration by which the speech movements may be studied, corrected and by means of which improvement may be observed. S. W. FERNBERGER (Pennsylvania).

418. LUQUET, G. H., Genèse de l'Art Figuré. *J. de Psychol.*, 1922, 19, 795-831.

Continuation of an article which has appeared in one of the earlier issues. In the present paper the author discusses the origin of paleolithic art and compared with children's drawings. The author believes that the origin of paleolithic art cannot be solved until we know the ethnologic conditions under which the people lived which called forth the drawings. S. W. FERNBERGER (Pennsylvania).

419. KOREN, J., What We Do Not Know About Crime. *J. of Crim. Law and Crim.*, 1922, 13, 446-452.

Unless we view the causation of crime in its relation to the whole social fabric, we shall see it imperfectly and in a distorted perspective. Preventive methods must be directed against what is structurally wrong in the accepted order of things. Immature, faulty or downright stupid legislation engenders crime. We have no reliable measure of the incidence of crime. We have no information to prove that the accepted methods of repressing crime are really deterrent. J. WALKER (Boston Psychopathic Hospital).

420. PETERSEN, A. M., The Administrative Problems of a Women's Reformatory. *J. of Crim. Law and Crim.*, 1922, 13, 438-445.

The paper discusses the administrative problems of a women's reformatory, first as regards the public, second the board of directors, third the staff, and fourth the inmates. J. WALKER (Boston Psychopathic Hospital).

421. ROGERS, H. W. A Digest of Laws Establishing Reformatories for Women in the United States. *J. of Crim. Law and Crim.*, 1922, 13, 382-437.

The data presented are compiled from the statutes of 19 states which have institutions established, maintained, and controlled by the state to which delinquent women may be sentenced for purposes of care, treatment, training and reformation. The various provisions of these laws are arranged under six main heads: establishment, administrative powers, commitments, description of institution, conduct of institution, and special provisions. The writer points out a tendency toward state centralization of authority and the placing of this authority in the hands of trained and salaried specialists. Also a tendency is seen toward treating the offender rather than the offense. J. WALKER (Boston Psychopathic Hospital).

422. GILLESPIE, J. E., The Transportation of English Convicts After 1783. *J. of Crim. Law and Crim.*, 1922, 13, 359-381.

The transportation of English convicts to colonies was conceived not only as a means of reform and punishment but even more as an opportunity for profitably employing and thereby saving much waste and expense caused the state by its offenders. As a means of preventing crime it was a dismal failure. A review of conditions in these penal colonies shows it to be a failure in other ways as well. J. WALKER (Boston Psychopathic Hospital).

423. ABBOTT, E., Recent Statistics Relating to Crime in Chicago. *J. of Crim. Law and Crim.*, 1922, 13, 329-358.

The writer presents very striking data on crime conditions in Chicago. After stating that statistics of arrests may serve to show more about the circumstances of police activity than about the actual changes in the number of crimes, she points out that the number of arrests for felonies in Chicago per population is on the increase. The relative number of arrests for misdemeanors is on the decrease although minor infractions of the law predominate. The percentage of convictions is decreasing. "The small percentage of convictions (some 34 per cent of the arrests on felony charges) may mean either that a large number of persons are arrested without proper evidence of guilt or that the really guilty are discharged through some inefficiency of the prosecuting machinery." Statistics from England, Wales, and Canada on convictions offer a striking contrast. Poor economy as well as class discrimination is seen in the fact that in over 55 per cent of the whole number imprisoned for failure to pay fines, the fine amounted to less than twenty dollars. The retention of capital punishment has been accompanied by an increase in the number of murders. The writer urges that facts about crime must be recorded with the greatest accuracy and must be given the fullest publicity. J. WALKER (Boston Psychopathic Hospital).

424. GARTH, T. R., The Intelligence of Indians. *Science*, 1922, 56, 635-636. G. J. RICH (Pittsburgh).

425. ISSERLIN, M., Neuere Anschauungen über das Wesen sexueller Anomalien und ihre Bedeutung im Aufbau der Kultur. *Zeits. f. päd. Psychol.*, 1922, 23, 324-342.

Bestimmte Auffassungen der Psychoanalyse von der Sexualität des Kindes, z. B. seine polymorphe Perversität im Säuglingsalter

werden von den Invertierten zur Begründung der Naturgemässheit homosexueller Betätigung als wissenschaftliche Grundlagen benutzt. Die Entwicklung aus der frühkindlichen Sexualität heraus kann nach zwei Seiten hin erfolgen, sodass das mannähnliche Liebesverhältnis nur eine Anders- nicht aber eine abnorme Entwicklung darstellt. Ihr Ringen um staatliche Anerkennung der Inversion suchen die Homoeroten besonders dadurch zu stützen, dass die soziologische Bedeutung jeder Art von Männerbünden besonders hell ins Licht gerückt wird, wobei man auf die invertierten Vollnaturen als die Träger jedes kulturellen Fortschritts in der Welt hinweist. I. unternimmt eine genaue Prüfung sowohl der wissenschaftlichen Grundlagen als auch der soziologischen Ergebnisse, welche die Unhaltbarkeit der aufgestellten Behauptungen und Forderungen der Invertierten nachweisen. Hinsichtlich des Homosexuellen vertritt er die Anschauung, dass der Homosexuelle sexuell bestimmbarer Psychopath ist, deren Sexualstreben und -betätigung im Laufe der Entwicklung in abwegige Bahn geraten ist. H. BOGEN (Berlin).

426. LÖWE, Die Gefahr der homosexuellen Infizierung der Jugend. *Zeits. f. Kinderforsch.*, 1922, 27, 130-137.

Es wird die Theorie, welche eine Anlage zur gleichgeschlechtlichen Liebe behauptet, abgelehnt. Die Ursache der Homosexualität ist in Erziehungsfehlern und Umwelteinflüssen zu suchen, die besonders neuropathischen, willensschwachen Individuen gefährlich werden. Verf. kämpft besonders gegen eine gewisse Richtung in der modernen deutschen Jugendbewegung, die das Recht zur gleichgeschlechtlichen Liebe für sich in Anspruch nimmt. Er betrachtet die Führer dieser Bewegung als psychisch Belastete. H. BOGEN (Berlin).

427. QUAST, W., Die literarischen Neigungen im Kindes- und Jugendalter. *Zeits. f. angew. Psychol.*, 1922, 21, 105-165.

Verf. hat die Inhalte von 3600 Schüleraufsätzen bearbeitet, deren Thema lautete: Welches Buch mir am besten gefallen hat und warum? Die Materialsammlung erstreckt sich auf 8-18 jährige Schüler und Schülerinnen aller Schulgattungen in der Stadt und auf dem Lande. Die Ergebnisse beziehen sich auf Abgrenzung und Charakterisierung der einzelnen Literaturperioden, welche Kind und Jugendlicher durchlaufen, Schilderungen des Ueberganges von einer Periode zur andern und dessen psychischer Bedingtheit, auf Kennz-

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eichnung lektüre- und bildungsbeeinflussender Faktoren, wie sie durch soziales und heimatliches Milieu Bedingt sind. H. BOGEN (Berlin).

428. BRIMHALL, D. R., Family Resemblances Among American Men of Science. *Amer. Nat.*, 1922, 56, 504-547.

This study aims to be a statistical measurement of resemblance in performance, with particular reference to performance in science. The group studied consists of approximately 1,000 American men of science and their families, including wives and near relatives of wives. Relatives included are brothers, sisters, sons, daughters, fathers, mothers, nieces, nephews, uncles, aunts, grandparents and first cousins. Professor Cattell gathered the original data with the use of a questionnaire from which there were 956 usable replies, after the answers were supplemented and verified by having recourse to Who's Who, American Men of Science, and Appleton's Cyclopaedia, and a number of "follow up" letters. The article includes over 30 pages of genealogies, covering the relatives just named, and classified according to profession. The article is to be continued. R. H. WHEELER (Oregon).

11. MENTAL DEVELOPMENT IN MAN

429. PEDERSEN, R. H., Weight of School Children in the Summer Time. *Scand. Sci. Rev.*, 1922, 1, 66-102.

Report of the weighing of a group of school children. Very few girls were included in the group and so the results may be considered for boys only. The author finds that summer vacation has certainly in most cases influenced the weight of children, but the main form of the curve is, however, not altered by it. The weight of the children is affected by local conditions, but the time of the year has had no noticeable influence upon the results during the period of measuring. S. W. FERNBERGER (Pennsylvania).

430. PIAGET, J. and ROSSELLÒ, P., Note sur les Types de Description d'Images chez l'Enfant. *Arch. de Psychol.*, 1922, 18, 208-234.

Result of clinical examination of school children. Several colored pictures were shown the children. The author differentiates the following types as a result of an examination of the kinds of images

aroused: Subjective, objective, intelligent and superficial. These are compared with the types suggested by Binet and by Lelesz. S. W. FERNBERGER (Pennsylvania).

431. RAEDER, O. J., LOWDEN, G. L. and BROUSSEAU, M. A., L'Évolution de la Méthode des Tests Binet-Simon en Amérique. *Annales Méd-Psychol.*, 1922, 80, 393-400.

Brief discussion of some of the work of Terman and Doll and of the Army tests with some interesting comparative tables of the mental ages of groups of the population found by the different investigators. S. W. FERNBERGER (Pennsylvania).

432. MYERS, G. C., Infants' Inhibition: A Genetic Study. *Ped. Sem.*, 1922, 29, 288-301.

Does inhibition mean merely arrest of activity or a shifting of neural discharge? Notes reported of inhibitions displayed by two children from birth until several years of age clearly indicate the latter. The practical implication is that to control or inhibit another's activity in a certain line we must offer a substitute line of possible desirable action that is capable of arousing his attention and his impulses. Other notes reported indicate that walking is a gradual evolution from the first day of life, when pressure on soles of feet elicits vigorous pushing, through rolling, creeping, etc., stages. J. F. DASHIELL (North Carolina).

433. BATES, R. L., A Study in Grades and Grading Under a Military System. *J. of Exper. Psychol.*, 1922, 5, 329-337.

In an institution where a definite and strict system of grading the class work of students obtained, an intensive study of the ratings of a group of thirty-four individuals was made in an effort to arrive at a comparison of the judgments of different instructors regarding students' abilities and to discover the relation between these judgments and scores obtained in performance of the Thurstone Psychological Test. It turned out that qualitative rating, that is, rating made by instructors on the basis of class room work, yielded a high correlation between various subjects of instruction. Quantitative rating however, that is, rating secured from scores in psychological tests, did not correlate so closely with the general average of class work. Rating from these tests gave a positive indication of the intellectual ability of the uppermost and lowermost percentiles of class proficiency. C. C. PRATT (Harvard).

434. POULL, L. E., Interests in Relation to Intelligence. *Ungraded*, 1922, 7, 1-54.

The monograph is a report of a study of the relation of the mental status of school children to their motivation as shown in the choices of school plans and occupational references. The purpose of this investigation was to find the relation between general intelligence and children's expressions of their interests in education. The subjects were in three public schools in the City of New York, Borough of Manhattan. The district in which the schools were located was a workingman's neighborhood as shown by the records of the parents' occupations. The investigation was limited to the grades 5B to 8B. The National Intelligence Test A and B Form 1, Pintner Non-Language Scale, Kelly-Trabue Completion Alpha, Pintner Educational Scale were used. They were also given a list of occupations and asked to make three choices. A second questionnaire gave a list of recreations and asked for three choices also. A third questionnaire inquired about their family name, occupation, education of brothers and sisters, etc. A detailed account of the tests with curves of distribution are included. Specimen cases of interest are noted. A bibliography is appended. The conclusions indicate that interests are not conditioned by intelligence except in so far as intelligence limits comprehension in the fields of interest. Of the children considered in this study, those planning to enter high school have a median I. Q. of 101.7. This means that 50 per cent of the probable high school entrants have not necessary intelligence to cope with the academic requirements for graduation. About 15 per cent of the children planning to go to work without further school training have the mental ability to become high school graduates. The percentage of boys going to work or planning for only part time secondary education is 73, girls 60. There is a high degree of correspondence between success in the Pintner Non-Language Scale and interest in occupations involving manual ability. Prospective Professional workers include children from borderline to superior adult. Approximately equal numbers of children express interest in skilled trades, mechanics, clerical, and professional work. E. MULHALL ACHILLES (Columbia).

435. TOWN, C. H., Quality. *J. of Crim. Law and Crim.*, 1922, 13, 453-458.

The writer urges that intelligence examinations made on the purely quantitative basis have resulted in so one sided a development

that "the whole structure of applied psychology is in danger of a collapse until it is balanced by an emphasis upon the methods for studying the qualitative factors of mental life." A psychometric rating offers little aid in corrective pedagogical procedure. What is needed is a differential estimate of the strong and weak points of an individual's mental make-up. The present neglected field of motor and volitional abilities, instinctive, emotional, and character reactions must be explored and utilized if psychological examinations are to be of real aid in planning future adjustments. J. WALKER (Boston Psychopathic Hospital).

436. SPENCER, L. T., The Effects of Practice Without Knowledge of Results. *Amer. J. of Psychol.*, 1923, 34, 107-111.

Four subjects were practiced for ten days in placing a dot behind a screen upon what they considered the extension of a given line, and were kept in ignorance of the accuracy of their work. In the case of three of the subjects there was a definite improvement of the function studied although there was no indication to the subject of the success or failure of each trial. The fourth subject tried to adjust himself to a supposed knowledge of his results after a few days and his reactions showed a sudden change of tendency. G. J. RICH (Pittsburgh).

437. WISSE, A., Die Fakultätsdifferenzen als psychologische Gruppenunterschiede. *Zeits. f. angew. Psychol.*, 1922, 21, 1-104.

Auf Grund der Ergebnisse eines Enquetematerials, das sich in der Form auf Heymans Vorschläge gründet, wird zu zeigen versucht, dass die Studentengruppen, wie sie an den verschiedenen Universitäten und technischen Hochschulen gegeben sind, kennzeichnende Unterschiede aufweisen sowohl bezüglich ihres Verhältnisses zum Studium, wie auch in ihren psychologischen Charakteren. Die Studenten können zunächst in zwei Gruppen eingeteilt werden. Die eine umfasst diejenigen, denen das Studium Selbstzweck ist, (Mathematiker, Naturwissenschaftler, Philologen und ein Teil der Theologen); die andere die, welche durch die nachher kommende Praxis zum Studium angezogen werden, (Mediziner, Juristen und der andere Teil der Theologen). In der ersten Gruppe finden wir die, deren Anlage sich an das von der Hochschule Gebotene mehr oder weniger eng anschliesst. Am Schluss der Analyse jeder Gruppe wird versucht, sie einer der von Heymans empirisch gewon-

nenen Temperamentstypen zuzuordnen. Die Zuordnung geschieht nach Emotionalität, Aktivität und dem Vorwiegen der Primär- resp. Sekundärfunktionen. Jurist und Theologe stehen dem Sentimentalen nahe. Der typische Mediziner fällt in den Bereich des Sanguinikers. Mathematiker, Physiker und Astronomen zeigen vorwiegend den Habitus des Phlegmatikers. Der Philologe liess sich nicht zuordnen. Die technische Sammelgruppe entfernt sich in den drei Hauptrichtungen vom sanguinischen Mittelpunkt. H. BOGEN (Berlin).

438. SCHÜSSLER, H., Experiment und Lehrerurteil. *Zeits. f. päd. Psychol.*, 1922, 23, 378–380.

Erfolgskontrolle einer psychologischen Schülersauslese, in der neben der psychologischen Fähigkeitsprüfung eine pädagogische Prüfung einherging. Nach der Trefferzahl bemessen haben beide Prüfungen das gleiche geleistet, wobei der psychologischen Prüfung der Vorzug zu geben ist, da sie bedeutend kürzere Zeit in Anspruch nahm. Verwendet man die Korrelationsmethode als Indikator der Methodenbewährung, so hat sich die pädagogische Methode als überlegen herausgestellt. Bei den Mädchen versagte Testprüfung—am Koeffizienten gemessen—ganz. Verf. Vermutet den Grund darin, dass in der Schule Höchstleistungen in der einen psychischen Funktion Ausfall oder Schwache einer andern nicht immer ausgleichen können. H. BOGEN (Berlin).

439. LOEWE, H., Die Gefährdung der Jugendbewegung durch Blüher's Deutung des Wandervogelproblems. *Zeits. f. päd. Psychol.*, 1922, 23, 342–356.

Als Teil der grossen Jugendgemeinschaftsbewegung in Deutschland sieht auch die Wandervogel-Bewegung ihr Ziel in der geistig-sittlichen Lebenserneuerung. Im Untersichsein lebt die reifende Jugend hier auf Wanderfahrten ihre Sehnsucht nach Selbständigkeit aus. Blüher sieht in der Bewegung eine Empörung gegen Schule und Elternhaus und ein sexuelles Problem, in dem Zusammenschluss der männlichen Jugend eine Auswirkung der homosexuellen Anlagen. L. zeigt die Fehler und die Gefährlichkeit des Blüher'schen Wirkens auf mit dem Ziel der Gesunderhaltung der Jugend. H. BOGEN (Berlin).

440. FRIEDRICH, G., Wie denken und wünschen sich die Schüler ihre Lehrer. *Zeits. f. päd. Psychol.*, 1922, 23, 356–368.

Spontanäusserungen und Antworten auf einen Fragebogen, von jungen Studenten gegeben, wurden systematisch verarbeitet. Die

Beurteilung des Lehrers durch den Schüler erstreckt sich auf alle wissenschaftlichen und erziehlichen Qualitäten. Die Beurteilungen zeugen von feinem Verständnis für das Wesen der Pädagogischen Arbeit. Die Schüler beobachten gut und treffen in ihren Werturteilen durchaus das, was auch der Fachmann erkennt und fordert. Kein Interesse zeigt der Schüler für die Gruppe der Beamteneigenschaften. H. BOGEN (Berlin).

441. GREGOR, A., und VOIGTLÄNDER, E., Charakterstruktur verwahrloster Kinder und Jugendlicher. *Zeits. f. angew. Psychol.*, 1922, Beiheft 31, 72 S.

Die Verf. verarbeiten das umfangreiche auf charakterologische Merkmale sich beziehende statistische Material der Fürsorgeerziehungsanstalt Klein-Meusdorf. Da sich die ausserordentlich zahlreichen Einzelergebnisse in Kürze nicht referieren lassen, seien die Gesichtspunkt der Verarbeitung angeführt. Es wird zunächst die Verwahrlosung und deren Formen begrifflich und statistisch festgelegt in Beziehung zu Geschlecht und Altersstufe. Dann werden die Charakterzüge bei den Verwahrlosten beider Geschlechter verglichen und die Beziehungen der Charakterqualitäten zur klinischen Form und moralischen Artung aufgedeckt. Aus allem geht hervor, dass besondere moralische und klinische Artung weitere Komplikationen bringt und neue Strukturdifferenzen begründet. So wird denn in der weiteren Untersuchung die Beziehung zwischen klinischer Form und Charakterstruktur beziehungsweise moralischer Artung beleuchtet. Aus der Analyse der Charakterstruktur moralisch different veranlagter Individuen und aus der Charakteristik der moralischen Gruppen ist erkennbar, dass diese nicht auf die von der heutigen Psychiatrie unterschiedenen Formen zurückführbar sind. Es wird auch der Versuch gemacht, Typen von bestimmten Eigenschaftskombinationen unter den Verwahrlosten zu erarbeiten. H. BOGEN (Berlin).

442. HYLLE, E., Die Verwertung der versuchsmässigen Intelligenzprüfungsverfahren zur Schulung der geistigen Fähigkeiten. *Deutsche Schule*, 1922, 26, 241-249, 289-298.

Der Unterricht, der sich immer mehr nach dem Ziele der Kraftbildung hin entwickelt und die Herrschaft der Stoffe immer weiter zurückdrängt, soll sich unter den anderen Bildungsmitteln auch der psychologischen Testmethoden bedienen, wobei sie nicht mehr zur

Gewinnung eines Urteils über den augenblicklichen Stand dieser Fähigkeiten dienen sollen, sondern der Uebung und Vervollkommenung derselben. Zahlreiche Beispiele werden gegeben, und die Möglichkeiten und der Wert der Einfügung reiner Fähigkeitsübungen in den Unterricht wird erörtert. H. BOGEN (Berlin).

443. STROHMAYER, W., Ueber Pubertätskrisen und die Bedeutung des Kindheitserlebnisses. *Zeits. f. Kinderforsch.*, 1922, 27, 113-130.

Zwei Neuerscheinungen aus der erzählenden Literatur,—Hesse, *Demian*, die Geschichte einer Jugend,—und Frank, *Die Ursache*—betrachtet der Verfasser unter psychiatrischen Gesichtspunkt. Den Erzählungen sowohl, als auch den vorliegenden Erörterungen darüber liegen Gedanken zugrunde, wie sie Adler hinsichtlich der Neurosenentstehung vertritt. H. BOGEN (Berlin).

444. BÜHLER, C., Tagebuch eines jungen Mädchens. *Quellen u. Stud. z. Jugendkunde*, 1922, Heft 1.

Das Tagebuch umfasst die Zeit vom etwa 14. bis zum 17. Lebensjahr. Die Schreiberin desselben macht eine sehr starke puberale Entwicklung durch. In ihrer ausserordentlich gesteigerten Ergänzungsbedürftigkeit richtet sich ihre Liebe, die völlig frei von jeder perversen Neigung ist, auf eine ihrer Lehrerinnen. Die Hoffnung, in ihrer Gemeinschaft durch die Wirrnisse der Weltanschauungskämpfe, der Kämpfe um die Stellung des Ichs zur menschlichen Umwelt, die geliebte Lehrerin zur Führerin zu haben, erfüllt sich nicht. Die Folge ist ein ewiges Ringen mit sich und um andere verstehende Menschen, die man lieb haben kann. Das Tagebuch bietet eine grosse Fülle typischen Materials aus der Entwicklung des Pubeszenten und für seine Stellung zum Erwachsenen. H. BOGEN (Berlin).

445. ROLOFF, H. P., Vergleichend-psychologische Untersuchungen über kindliche Definitionsleistungen. *Zeits. f. angew. Psychol.*, 1922, Beiheft 27, 168 S.

Die untersuchung ist in der Hauptsache eine Alterseichung von Definitionstests im Massenversuch unter Berücksichtigung von Intelligenzschätzungen und sozialer Schichtung. Aus den zahlreichen Ergebnissen der eingehenden Arbeit werden hier nur die wichtigsten angeführt. Definition durch Zweckangabe, durch Beispiel und durch

Oberbegriff und spezifische Differenz stellen die Hauptformen des kindlichen Definierens dar. Die Fähigkeit zu definieren wächst mit zunehmendem Alter ohne Unstetigkeiten oder Stillstände in gesetzmässiger Weise: die Wachstumsgeschwindigkeit steigt allmählich von Null bis zu einem Maximum und sinkt dann stetig wieder zu Null ab. Abschluss der Entwicklung für konkrete Begriffe mit 10–12 Jahren, für abstrakte Begriffe mit 12–13 und halbabstrakte Begriffe beträchlich nach 13 Jahren. Bei Gymnasiasten ist die Fähigkeit zu definieren derjenigen der Volksschüler um drei, und der der Realschüler um zwei Jahre voraus in der Entwicklung. Vier Stufen sozialer Schichtung entsprochen vollkommen vier Stufen von Definitionsleistungen so, dass die höheren sozialen Schichten auch höhere Leistungen aufweisen. Die Korrelation zwischen Intelligenzschätzung und Definitionsleistung ist hoch positiv. Als Begabungsprobe ist der Test für das Alter von 9–12 Jahren anzusetzen. H. BOGEN (Berlin).

446. BAUMGARTEN, F., Eine Ehrgeizprobe. *Prakt. Psychol.*, 1922, 3, 333–348.

Möglichst homogene Gruppen von Versuchspersonen hatten zwei identische Leistungen nacheinander auszuführen. Bei der zweiten wurde zur Steigerung der Leistung ein Stimulus ehrgeiziger Art angewendet. Verf. erörtert eingehend die Bedenken, die ein Vergleich der beiden äusserlich durchaus gleich anmutenden Versuche in sich schliesst. Unter den Ergebnissen sind folgende bemerkenswert: Die Steigerung der Leistung durch Ehrgeiz macht sich da besonders bemerkbar, wo die anfängliche Leistung klein war. Bei anfänglicher grosser Leistung ist der Zuwachs in der Regel entweder gering, oder er sinkt in der zweiten Probe trotz des Stimulus. Gut Arbeitende wären demnach diejenigen, die ohne Stimulus gleich mit Höchstleistung arbeiten. Der Ehrgeiz war wirksam bei nicht eingeübten Funktionen, dagegen war seine Wirkung gering bei eingeübten. Man sollte also unterlassen, die einmal eingeübte Tätigkeit durch von aussen wirkende Faktoren zu beschleunigen. H. BOGEN (Berlin).

447. FRIEDRICH, A., Die Analyse des Schlosserberufs. *Prakt. Psychol.*, 1922, 3, 287–299.

Der Beruf des Schlossers ist im allgemeinen Formgeben des Eisens durch Handarbeit zu dem ausgesprochenen Endzweck,

praktisch verwertbare Arbeit zu liefern. Die Untertätigkeiten des Schlossers in grossen Umrissen sind folgende: Erfassen eines Auftrags, Erkennen und Beurteilen des Zwecks des Auftrags, die Vorbereitungsarbeiten, die Entwicklung des Arbeitsganges, Vorprüfen der Teile und Anzeichnen, Einzelhandarbeiten, Zusammensetzarbeit, Nachmessen. Verf. löst jede Untertätigkeit in ihre kleinsten Arbeitsteile auf und bestimmt die zu ihrer Ausführung wichtigen psychophysischen und psychischen Komponenten. Es werden so im ganzen 33 Einzeltätigkeiten analysiert. Die Anzahl der dabei aufgefundenen Einzelkomponenten beträgt 50, die übersichtlich zusammengestellt noch in starkbetonte Eigenschaften und Eigenschaften mit wechselnder Betonung gegliedert werden. H. BOGEN (Berlin).

448. HAVILAND, C. F., Mental hygiene needs arising subsequent to school life. *Ment. Hyg.*, 1922, 6, 688-699. R. H. WHEELER (Oregon).

449. CLARK, L. P., The importance of a special educational training for mental defect dependent upon organic lesions. *Ment. Hyg.*, 1922, 6, 708-713.

Evidence is accumulating in favor of the view that feeble-mindedness is based on other than hereditary causes. Various accidental factors of imperfect development of germ plasm either before or after conception (Davenport), the exogenous factors or modifiers of the rates of development of the embryo and fetus (Stockard), the endocrine and toxic factors during gestation (Weygandt) probably have a great deal to do with feeble-mindedness. In this field there is urgent need for research. Moreover, case studies show that there are instances of feeble-mindedness due to fairly well localized lesions. In these cases specialized types of training have resulted in marked improvement, even to the release of an individual from the institution. A proper classification of various accidental instances of feeble-mindedness would result in salvaging a number of cases that are now being trained with those who are thought to be hereditary types.

R. H. WHEELER (Oregon).

450. THOM., D. A., Results and future opportunities in the field of clinics, social service and parole. *Ment. Hyg.*, 1922, 6, 714-728. R. H. WHEELER (Oregon).

451. TAYLOR, M., The child in the home. *Ment. Hyg.*, 1922, 6, 746-772.

This is an extract from a survey of mental health conditions in a metropolitan district. Conditions in 49 needy families are described, together with a tabulation of various defects—physical, mental and moral—discovered in 190 children. These data show the need of mental-hygiene clinics, the instruction of social workers, nurses and parents in the simple principles of child training, and better recreational facilities for the children. R. H. WHEELER (Oregon).

452. ROSANOFF, A. J., Child mental hygiene in Erie County, New York. *Ment. Hyg.*, 1922, 6, 773-797. R. H. WHEELER (Oregon).

453. STECKEL, H. A., The social-service department and its relation to an extensive parole system. *Ment. Hyg.*, 1922, 6, 798-814. R. H. WHEELER (Oregon).

454. HUNTER, W. S., and SOMMERMIER, E., The Relation of Degree of Indian Blood to Score on the Otis Intelligence Test. *J. of Compar. Psychol.*, 1922, 2, 257-277.

Using the Otis Intelligence Test (1919 edition) on 715 American Indians at the Haskell Institute, Lawrence, Kansas, and comparing the scores so obtained with scores obtained by Otis from 1366 white children, the investigators were able to establish a positive correlation between degree of Indian blood, whether 4/4, 3/4, 1/2, or 1/4, with intelligence score; even among the Indians themselves, excluding reference to the whites, a positive correlation resulted between score and amount of Indian blood. Full-blood Indians gave the poorest scores and the least Indian-blooded hybrids gave the highest scores in the Indian group; the whites excelled all degrees of Indians. The paper contains seven figures of results, including distribution curves, comparison diagrams, etc., and eleven tables of numerical data. H. R. CROSLAND (Oregon).

12. MENTAL EVOLUTION

455. HAMILTON, W. F., Coördination in the Starfish. III. The Righting Reaction as a Phase of Locomotion (Righting and Locomotion). *J. of Compar. Psychol.*, 1922, 2, 81-94.

Hamilton's third series of experimental observations of the coördinated reactions of the starfish fail to confirm Moore's view

that righting results from reflexes stimulated by dorsal receptors of the starfish, Cole's view that righting is not a continuation of the locomotor orientation, Preyer's view that righting is an intelligent adaptation to environmental circumstances mediated by anatomical centers, and Loeb's view that righting results from trial and error reactions of the tube feet until they finally attach to a substrate. His results rather confirm the view of Jennings that righting involves a unitary impulse which determines locomotion; in other words, righting is a continuation of the locomotor reaction which was in progress before the animal was inverted. The paper contains eight figures showing various phases of the righting reaction, its functional antecedents and its functional sequences afterward. The author's bibliography refers to ten other investigators and to sixteen articles by these workers. H. R. CROSLAND (Oregon).

456. HUNTER, W. S., Habit Interference in the White Rat and in Human Subjects. *J. of Compar. Psychol.*, 1922, 2, 29-59.

The literature of habit interference in animals is reviewed and the results are summarized, as a background for Hunter's investigation which sought to solve two problems, namely: (1) To plot a curve for habit interference; and (2) to secure data concerning the correlation existing between the ability to form a habit and the ability to break that habit by establishing an antagonistic habit. The procedure consisted of having animals learn visual discrimination habits and then of learning antagonistic reactions to the same stimuli, light intensities physically identical, presented in the T-shaped discrimination box used by Hunter, Yarbrough, and Pearce. After preliminary orientation, the animals were run through the box ten trials per day, the subject running through the right side of the box when light was presented and through the left side for darkness. This procedure continued until the animal's trials were 95 per cent correct for two successive days. Then a control was introduced, in which neither light nor darkness was used, to ascertain whether or not light was the essential cue for the response. Then the formation of habit No. 2 was undertaken, the running of the rats to the left for light and to the right for darkness. The results here obtained dealt with total trials required prior to completed learning. Another series of experiments, with same apparatus, concerned itself with interference between unit maze habits. A third series of experiments, with the same problems, was executed with the circular maze as the apparatus. Finally, a fourth series dealt with the problems already

outlined, but with 31 human subjects, who worked blindfolded on a pencil maze. The results which accrued from these investigations are the following: (1) Opposite visual habits exhibit negative transfer or habit interference; (2) when the two habits are compared in the form of a Vincent curve, interference seems to have its locus in the first one-half of learning; (3) positive transfer is exhibited by any consideration of total times, total distances, or total trials (and the latter halves of the learning curves for time and distance show almost no improvement); (4) the Vincent curve seems a favorable one to use when a composite representation of the learning process is desired; (5) a curve, constructed through the points of zero, the 100th trial, and the point of total interference, gives an interference curve for visual habits; (6) greater variability characterizes the second visual discrimination habit as compared with the first, and this condition is reversed with maze habits; and (7) rats gave no correlation between ability to form one visual discrimination habit and the ability to break that habit through establishment of the opposite habit, while human subjects with the pencil maze exhibited a high correlation between the two abilities. H. R. CROSLAND (Oregon).

457. Kuo, Z. Y., The Nature of Unsuccessful Acts and Their Order of Elimination in Animal Learning. *J. of Compar. Psychol.*, 1922, 2, 1-27.

In a neat and clearly written paper, Kuo describes an experiment which sought to differentiate between kinds of unsuccessful acts, and to establish the order in which these kinds of unsuccessful acts are eliminated in animal learning. He conceives of two types of unsuccessful acts: the ill-adaptive act, due to punishment, or otherwise tending to disrupt an animal's responses; and the excessive act, which merely delays the successful response. The experiment was done on 13 white and black male adult rats, carefully chosen as being docile. After preliminaries, these were run through a four-compartment multiple choice maze in the quest of food, there being provided electric-shock, detention, long-circuit and short-circuit entrances to the food. This experiment disclosed the fact that electrically punished acts were earliest eliminated; that confinement or detention next led to elimination; and that the short path to food was selected over the long route. The paper presents one cut and three tables; and procures a keen appraisal of the current explanations of selection and elimination, namely, the principles of

pleasure-pain, congruity (facilitation) and incongruity (inhibition), completeness of response, conditioned reflex, recency and frequency, sensory intensity, and determining set (which is variously named). The author follows Woodworth, Tolman, Perry, and others, in adhering to the principle of determining set and its preparatory reactions; and states that successfulness and unsuccessfulness merely characterize the relation of the preparatory reactions to the guiding, driving, dominating *determinierende Tendenz*. H. R. CROSLAND (Oregon).

458. BILLS, M. A., and MAUKIN, O., Preliminary Study of the Effects of Methyl Alcohol Fumes on Brightness Discrimination in the White Rat. *J. of Compar. Psychol.*, 1921, 1, 495-504.

In an effort to determine by objective methods the effects of the fumes of methyl alcohol on the brightness discrimination of white rats when the alcohol in no way came in contact with the animal's skin, three sets of animals, eighteen in all, about one month old, were used as subjects. The apparatus consisted of the Yerkes discrimination box and brightness apparatus with movable stimulus adapter, the sources of light being two standard 25-watt mazda lamps placed $16\frac{1}{2}$ inches from the stimulus plates. The amperage was regulated by a resistance coil and a Weston ammeter. Training was first given in the learning to discriminate the positive stimulus of light (0.30 amperes) from darkness. When the animal had learned well enough so that in three successive days his trials averaged 90 per cent correct, the amperage of the light was reduced, and training continued, until the animal reached an intensity of light which forbade further discrimination, and after further testing, the last lowest discrimination intensity was regarded as the animal's lower discrimination limen. After the limen had been reached and determined, the animal was placed in a cage through which alcohol fumes were passed (this cage is shown by two cuts), and remained there from a minimum of 11 days to a maximum of 24 days (for different animals). All rats kept continuously in the cage became sick, but, except for a few cases, none of the animals refused to attempt discrimination and all were able to maintain the limen they had reached before the application of alcohol fumes. Three tables of results are given. The authors raise the question as to whether or not continued practice, in the alcohol fume cage, over and above the practice the rats had had before the application of alcohol, led

to the result that the rats' brightness sensitivity was in no wise decreased, and are inclined to answer their question in the negative. H. R. CROSLAND (Oregon).

459. STONE, C. P., The Congenital Sexual Behavior of the Young Male Albino Rat. *J. of Compar. Psychol.*, 1922, 2, 95-153.

Stone, under the direction of Lashley, has made a most detailed and systematic study of the constituent reactions in the complex, developed sexual behavior of the male albino rat, and has traced the sequences and the forms of combinations which these component acts pass through as the young male becomes pubescent, mature, and experienced in sexual intercourse. The more specific object of this particular study was to envisage the external stimuli which act as cues and motivants and controls of the sexual act. Fifty young males and three young females were used as subjects; various groups of these were used in different series in the investigation; and included were blind, anosmic, ageusic, partially deaf, and castrated males. The article contains one table of the categories of behavior and twelve tables of experimental observations, and a bibliography of twenty-one references. The chief conclusions reached were as follows: (1) the chief elements of the primary sexual act appear within a very short period of time at the age of puberty; (2) the overt pattern of the act consists of pursuit and mountings, palpation of female's sides and the depressing of lumbar region and raising of sacro-coccygeal region of the female, pelvic movements of male and the piston-like action of penis, cessation of female's palpations, the backward lunge, and the licking of the penis; (3) age and experience change somewhat the sexual act, as regards the inclusion of acts which earlier are omitted; (4) the first copulation or copulatory act occurs at somatic maturity but somatic maturity does not necessarily indicate copulatory ability; (5) after his first experience, the young male does not fall far behind the old male in the number of copulations per thirty minutes following the first act, the averages being 25 to 35, and reaching the maximum in one case of 53; (6) the movements of the receptive female seem to present the stimuli which are adequate for initiating the act; (7) visual stimuli are unessential for the initiation of the act, as also are olfactory and gustatory stimuli, while the partially deaf males which also were blind, anosmic and ageusic continued to copulate after the partial destruction of hearing; and (8) the lack

of evidence of the functional importance of the special senses in initiating the act leads to the conjecture that the cutaneous and deep sensibility receptors are the primary organs that mediate the exteroceptive stimuli by which the act is initiated. A later paper will deal with the internal, as opposed to the external, conditions in the sexual act. H. R. CROSLAND (Oregon).

460. NICHOLLS, E. E., A Study of the Spontaneous Activity of the Guinea Pig. *J. of Compar. Psychol.*, 1922, 2, 303-330.

Using a light cage which rested on three Marey tambours which actuated by air tubes writing styli on a revolving kymograph. Nicholls obtained records for the full 24 hours of all activities engaged in in that time by a guinea pig. Her findings were somewhat as follows: At a temperature of 65° F. and humidity of 42 per cent, the guinea pig almost never sleeps and is active 21.6 hours of the 24 in continuous darkness and 20.64 hours of the 24 in constant illumination; very young pigs are just as active as are the older ones; male pigs were more active than the females; a daily hour's feeding produced greater activity than when food was constantly in the cage; starving for three days led to a great curtailment of activity; eating seems more essential to activity in the guinea pig than sleep; high temperatures reduce the animal's activity 50 per cent; and as compared with the white rat, which spends 41 per cent of its time in activity and 59 in rest, the pig spends 89 in activity and 11 in short rest periods. H. R. CROSLAND (Oregon).

461. DEXLER, H., Der heutige Stand der Lehre vom tierischen Gebaren (Tierpsychologie). *Lotos*, 1921, 69, S. 83-126.

Vorsichtige kritische Darstellung der verschiedenen Richtungen der Tierpsychologie bis zur jüngsten, durch Köhler ausgebauten. Verf. zieht den Ausdruck "synthetische Gebarenslehre" dem nicht eindeutigen "Tierpsychologie" vor; in Rücksicht auf die Notwendigkeit, psychologischen Vergleichen die Betrachtung der physiologischen Funktionen vorangehen zu lassen. Andererseits werden die nachgewiesenen Leistungen einer "natürlichen Intelligenz" der Tiere (Arbeiten von v. Allesch, Heck, Hunter, Köhler, v. Maday, Pfungst u. a.) durchaus anerkannt. Die Lehre von den Instinkten weist Verfasser vorwiegend in die Biologie, nicht in die Psychologie; als Aufgabe der Gebarenslehre wird die Schilderung der Eigenschaften des tierischen Bewegungsverhaltens nach objek-

tiven Merkmalen bezeichnet. Umfangreiche Literaturangaben erhöhen den Wert der gründlichen Arbeit. E. SCHICHE (Berlin).

462. HEYMANS, G., Bemerkungen zur Tierpsychologie. *Zeits. f. angew. Psychol.*, 1922, 21, 84-104.

H. unterbreitet neuartige Gesichtspunkte für die Deutung des tierischen Gebahrens. Er fordert vergleichende Betrachtung an der Hand der Fälle, in denen der Mensch sich ähnlich verhält. Es verdienen dabei besonders diejenigen Beachtung, welche als Geistesabwesenheit oder Präokkupation bezeichnet werden. Solche Ähnlichkeiten im Verhalten liegen vor, wenn das zu erreichende Ziel zu stark oder die dahin führenden Mittel zu schwach fixiert werden; ferner bei Beschränktheit der Interessen, bei Festliegen der Aufmerksamkeit auf Lebensbedürfnisse und damit unmittelbar Zusammenhängendes. So kommt es ihm bei der Erklärung des tierischen Handelns in erster Linie auf die allmähliche Erweiterung des Bewusstseinsfeldes mit steigender höherer Organisation der Tiere an. Der Unterschied zwischen Instinkt und Intelligenz ist nur als ein formaler anzusehen; er bezieht sich nicht auf die Eigenart, sondern auf die Anzahl der im Bewusstsein wirksamen Motivvorstellungen. Diese Anzahl ist wiederum abhängig von dem Nachlassen krampfhafter Fixation der Aufmerksamkeit innerhalb des Aufstiegs in der Tierreihe. Unter diesen Gesichtspunkten gesehen, lassen sich auch dann das menschliche und tierische Denken und Handeln in eine nirgends eine unüberbrückbare Kluft zeigende Reihe stellen. H. BOGEN (Berlin).

463. PEARL, R., Experimental studies on the duration of life. VI. A comparison of the laws of mortality in *Drosophila* and in man. *Amer. Nat.*, 1922, 56, 398-405.

The following points in the life span of man and *Drosophila* were taken to be biologically equivalent: the first day of metamorphosed life for the fly to correspond with twelve years for man (male, white) and the ninety-seventh day for the fly and the ninety-eighth year for man. These two points of coincidence represent the two points for each type of life when the instantaneous death-rates are at a minimum and maximum, respectively. By then superimposing the life-curves it is found that throughout the life span the number of survivors, out of the same original number starting together, is higher in man than in *Drosophila*. R. H. WHEELER (Oregon).

464. PEARL, R., and PARKER, S. L., Experimental studies on the duration of life. V. On the influence of certain environmental factors on duration of life in *Drosophila*. *Amer. Nat.*, 1922, 56, 385-398.

In experiments involving the determination of the duration of life in 2576 individual flies, an increase of roughly 10 per cent was found in the mean duration of life where the culture bottles, containing the flies, received increased ventilation by covering the mouth with one layer of No. 48 mesh bolting cloth. Control flies were carried in bottles with mouths plugged by cotton. "Old Falmouth Line" of flies tended to congregate around the mouth of the ventilated bottles, and it was this line that showed the difference in longevity. "Quintuple" flies showed no such increase in longevity, due to fundamental differences in behavior. This stock had functionless wings, were less active, and appeared to live on a lower metabolic plane. Their oxygen needs, therefore, would likely be smaller, and hence there would be revealed little difference between longevity in plugged and ventilated bottles. It was found that there was no prolongation of life of *Drosophila* produced by adding embryonic juice (either from the chick, or from the larvæ of *Drosophila* itself) daily to the food, to the amount of 2 per cent of the total food material, beginning with the thirty-first day of the flies' life. In this experiment, 2990 individual flies were used. The author believes that since *Drosophila* are extremely sensitive to food changes, any tendency toward longevity that might have been produced by embryonic juice (as it does in the case of cell cultures *in vitro*) would be counteracted. R. H. WHEELER (Oregon).

465. SUMNER, F. B., Linkage in *Peromyscus*. *Amer. Nat.*, 1922, 56, 412-417. R. H. WHEELER (Oregon).

466. HOWELL, A. B., Agencies which govern the distribution of life. *Amer. Nat.*, 1922, 56, 428-437.

An interesting classification of factors operating in the dispersal of life. Life types are divided into active and sedentary forms. Active forms are subdivided into aquatic, fossorial, terrestrial, arboreal, volant. Other factors to be considered are (1) direct physical barriers—water to land forms and land to water forms—forests, plains, deserts, mountains, protective cover, etc.; (2) regulation by temperature, such as zonal (latitude, altitude, proximity to

sea, ocean currents, prevailing winds), mean temperature during reproduction, mean maximum, mean minimum, and delimiting temperatures, faunal (humidity and precipitation), associational (fires, avalanches, streams of cold or warm water, glaciers, topographical situation, color, moisture and texture of soil); (3) food, and (4) enemies. R. H. WHEELER (Oregon).

467. FASTEN, N., The tapeworm infection in Washington trout and its related biological problems. *Amer. Nat.*, 1922, 56, 439-447. R. H. WHEELER (Oregon).

468. OSBORN, H. F., Migrations and affinities of the fossil Proboscideans of Eurasia, North and South America, and Africa. *Amer. Nat.*, 1922, 56, 448-455. R. H. WHEELER (Oregon).

469. ALLEN, E. J., The progression of life in the sea. *Amer. Nat.*, 1922, 56, 481-503.

The first part of the paper deals with a review of recent literature on the chemical and physical processes basic to the transition from organic substance to living protoplasm. Three important reactions: the formation of formaldehyde from carbonic acid, with liberation of free oxygen; the formation of sugar from formaldehyde, and the formation from nitrites and formaldehyde of nitrogenous organic substances, are the most fundamental and characteristic reactions of organic life. Assuming that life originated in the water, the fundamental postulate may be advanced that organic compounds, formed by the energy of light vibrations from ions present in the water form the first important step, in the progression of life. As the molecules grew more complex by the progressive linkage of the carbon atoms of newly formed carbohydrate and nitrogeneous groups, organic substance, for purely physical reasons, then probably assumed the colloidal state. Electric charges on the colloidal particles would produce the effect of absorption; fresh ions would be attracted from the surrounding medium, producing a kind of growth, entirely physical in character. This colloidal plasma would differ in surface-tension from the water. So much for the anabolic process in its primitive form. Katabolism implies the process of deriving energy from the breaking down of the plasma itself—a process which probably originated in the absence of light, as the first "adaptation" of the organism. Ultimately a nucleus, in the center of the organism, become concerned

with katabolic processes. Due to the effect of light, an organism would grow more rapidly on the upper than on the lower side. With growth and concentration of reserve energy within the organism it became of greater specific gravity than the surrounding water. In response to this need there developed an anterior flagellum. From this point on the author traces briefly the progression toward specialized organisms and ends his paper with a brief sketch of how the fish probably originated in fresh-water streams where its elongated body was an adaptation to the flowing current; and then migrated to the sea. This article contains so much detail of interest that a brief review cannot do it justice. R. H. WHEELER (Oregon).

470. HOLMES, S. J., A Tentative Classification of the Forms of Animal Behavior. *J. of Compar. Psychol.*, 1922, 2, 173-190.

Using as the basis of his classification utility for the species, Holmes classifies the behavior of animals into: I, adaptive, and II, nonadaptive. The adaptive behavior subdivides into (1) self-maintaining, and (2) race-maintaining. Self-maintaining behavior subdivides into: (a) sustentative, (b) protective, and (c) ameliorative. Race-maintaining behavior subdivides into: (a) sexual, (b) parental, and (c) social. Each of these has its own more detailed subdivisions. The problems confronting him who would classify the forms of behavior are many, varied and difficult, especially if one essays an evolutionary or phylogenetic classification. H. R. CROSLAND (Oregon).

471. WESTERFIELD, F., The Ability of Mudminnows to Form Associations with Sounds. *J. of Compar. Psychol.*, 1922, 2, 187-190.

By daily feeding of bits of snail, or comphorated grey paper resembling the bits of snail, to mudminnows in darkened and insulated jars while at the same time transmitting the vibrations of a low tone and a high tone (the former for palatable food and the latter for the unpalatable grey paper) to the minnows by means of a ukelele, this investigator has demonstrated the "conditioned reflex" associations of this animal to tones. When, after much practice, the sound stimuli were reversed, i.e., the high tone now accompanied the palatable food and the low tone the grey paper, the minnow evinced his old reactions—he reacted toward the grey paper and away from the food. H. R. CROSLAND (Oregon).

472. McDONALD, H. E., Ability of *Pimephales Notatus* to Form Associations with Sound Vibrations. *J. of Compar. Psychol.*, 1922, 2, 191-193.

In somewhat the same fashion as Westerfield had investigated the sound-vibratory associations of the mudminnow, McDonald has demonstrated the "conditioned reflex" sound-vibratory associations of the blunt-nosed minnow (*Pimephales notatus*). What organs of the minnow served as the receptors for the sound-vibrations of the water was not ascertained. H. R. CROSLAND (Oregon).

NOTES AND NEWS

THE Yale Psychological Laboratory which was formerly located in a small building at 307 York Street has been moved to Kent Hall, recently vacated by the Chemical Department which has moved to the new Sterling Laboratory. The Psychology Department now has ample space for instruction, research, and laboratory purposes, having available eleven small rooms suitable for either research or office use, two dark rooms, three class rooms, an animal room, a library, a seminary room, an apparatus room, a large room for the Introductory Experimental course, and sufficient room for the laboratory shop.

DR. T. R. GARTH, formerly of the University of Texas, has been appointed head of the department of education at the University of Denver, Denver, Colorado.

PROFESSOR R. M. OGDEN, of Cornell University, has been appointed lecturer on education at Harvard University for the second half of the academic year 1922-1923.

THE National Committee for Mental Hygiene was engaged during August, September and October in making a mental hygiene survey in North Dakota. This is one of several state surveys being conducted by the national committee. Recommendations are made to the governor and legislature for appropriate action. Those conducting the North Dakota survey were: Dr. Thomas H. Haines, consultant for the National Committee for Mental Hygiene, director; Dr. W. G. Reeder, assistant professor of school administration in the Ohio State University; C. L. Hultgren, psychologist for the national committee, and M. A. Sessions and L. Martin, psychiatric social workers for the committee.

DR. E. C. SANFORD, president emeritus of Clark College and at present head of the department of psychology, has been appointed acting president of Clark University in the absence of President W. W. Atwood.

ELIZABETH E. LORD, psychologist of the Chicago Juvenile Court, has been appointed clinical and research assistant in the Yale University Psycho-Clinic.

THE following appointments have been made at Teachers College, Columbia University: S. S. Colvin, professor of educational psychology at Brown University, G. A. Coe and A. Shiels have all been elected professors of education.

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